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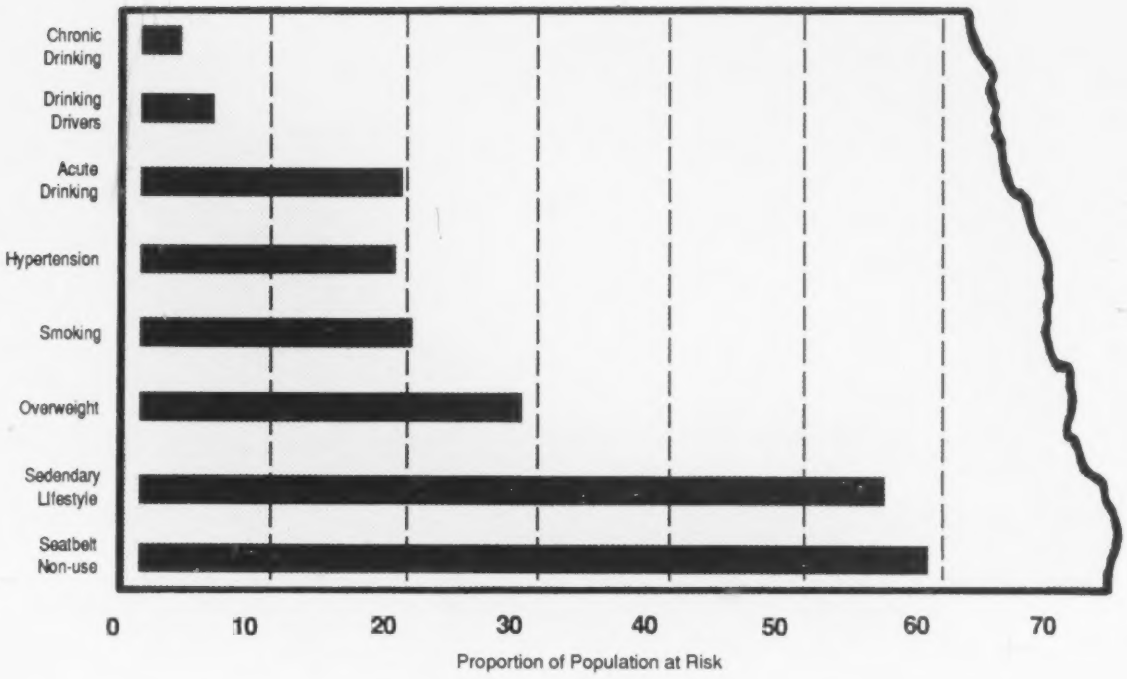
Behavioral Health Risks



# of North Dakotans

1989

North Dakota State Department of Health and Consolidated Laboratories

A REPORT ON THE

1989 BEHAVIORAL HEALTH RISKS

OF NORTH DAKOTANS

George A. Sinner, Governor
State of North Dakota

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Report Prepared by:

Division of Health Promotion & Education

Supported by funds from the Centers for Disease Control

December 1990

FOREWARD

At the close of the year, one has the tendency to look back at where we have been while trying to envision what the future holds. In 1989 the following Mission Statement of the North Dakota State Department of Health and Consolidated Laboratories was adopted:

> We, as public employees, are dedicated to the goal of assuring that North Dakota is a healthy place to live and to the belief that each person should have an equal opportunity to enjoy good health. To accomplish this mission, we are committed to the promotion of healthy lifestyles, protection and enhancement of the environment, and provision of quality health care services for the people of North Dakota.

Although the primary focus of public health is to reduce risks through prevention and health promotion, accomplishing this is often dependent upon public understanding and support. The Institute of Medicine's (IOM) 1988 report The Future of Public Health stresses the need for participation by consumers, communities, voluntary health organizations and interest groups, news media, and networks with other health professionals and within various levels of government, to fulfill public health's promise for the future.

It is our wish to share this information with you to facilitate communication with agencies and individuals responsible for working to improve the health of the residents of North Dakota.

Promoting a Healthier Tomorrow,

Robert M. Wentz MD

Robert M. Wentz, M.D.
State Health Officer
ND State Department of Health
& Consolidated Laboratories

December 1990

PREFACE

The Behavioral Risk Factor Survey data has been weighted by the National Centers for Disease Control to compensate for differences between the survey sample and the state population according to age and gender. In addition, the weighting procedures adjust the data for probability of selection based on the number of adults in the household and on the number of telephone numbers reaching the household.

The reader should be aware that weighted data is representative of the North Dakota adult population, while any unweighted data applies only to the survey respondents. Extended interpretation of the unweighted data beyond the sample respondents is not recommended particularly within a category such as race, education, or marital status where the number of respondents falls below 50.

The final sample under-represented the 18-24 year age group and men and over-represented the 65+ age group and women.

Readers interested in obtaining a copy of the questionnaire used in 1989 should contact:

Division of Health Promotion and Education
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Bismarck, North Dakota 58505-0200
(701) 224-2367

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Every day, Americans make choices that profoundly affect their health. Many are unaware that these can be life-or-death decisions. The public health community directs a number of its programs at influencing these choices--at teaching people that the right habits can ward off disease and add quality and years to their lives. Once established, these programs need to be evaluated and refined until their effectiveness is proven by their results. The Behavioral Rick Factor Surveillance System (BRFSS) was designed to provide the yardstick this kind of evaluation requires.

Chronic Disease Notes & Reports, September 1989

INTRODUCTION

Since 1984, the North Dakota State Department of Health, with support from the Centers for Disease Control (CDC), has participated in the Behavioral Risk Factor Surveillance System (BRFSS). This survey was designed to determine the prevalence of health behaviors related to the 10 leading causes of death among adults in the United States. Due to the absence of state-specific information about the prevalence of these health behaviors, participation in the BRFSS network has steadily increased. In 1989, health departments from 39 states and the District of Columbia participated in the survey.

The department used standard questionnaires and methods to conduct monthly telephone interviews. Telephone numbers were randomly generated by CDC and respondents were randomly selected from among the adults 18+ years of age who reside in each household contacted. The results obtained were self-reported. The data has been analyzed by CDC and weighted to match the state's census data, thus providing estimates of the risk factor prevalence among North Dakota adults.

This report focuses on the data collected during calendar year 1989. The risk factors discussed are tobacco use, sedentary lifestyle, overweight, hypertension, alcohol consumption, and seatbelt non-use. Preventive health practices such as screening for blood cholesterol, cervical and breast cancer are also included.

An overview of the prevalence of behavioral risk factors from 1984 to 1989 is provided in Table A1 on the following page. The prevalence of cigarette smoking is declining and the 1990 results will indicate whether this trend is statistically significant. Seatbelt use has increased from 19.1% in 1984 to 41.8% in 1989.

Technical notes regarding the survey are included in Appendix A. A table ranking the major risk factors from low to high prevalence for the states participating in 1989 is found in Appendix B. Included in Appendix C are several tables related to the leading causes of death for this state in 1989.

Table A1
PROPORTION OF THE POPULATION AT RISK
BY SPECIFIC BEHAVIORAL RISK FACTORS
NORTH DAKOTA RESIDENTS, AGES 18 AND OLDER, 1984-89

	1989	1988	1987	1986	1985	1984*
Lack of seat belt use	58.2%	60.5%	69.1%	71.2%	77.2%	80.0%
Sedentary lifestyle	55.6%	57.5%	61.3%	63.4%	54.6%	19.7%**
Obesity	28.0%	28.2%	26.7%	26.0%	24.7%	25.6%
Cigarette Smoking	20.4%	22.1%	23.7%	26.0%	25.6%	26.9%
Smokeless Tobacco	N/A	3.9%	5.0%	6.0%	4.5%*	N/A
Acute Drinking	19.7%	21.7%	22.5%	23.9%	24.0%	24.0%
Chronic Drinking	3.0%	3.3%	4.3%	4.7%	3.7%	7.4%
Drinking and Driving	5.9%	5.9%	5.6%	5.8%	9.8%	6.8%
Uncontrolled Hypertension	1.1%	0.6%	1.4%	0.8%	1.0%	1.1%
Current Hypertension	18.1%	15.1%	18.6%	15.6%	16.2%	14.9%
Sample Size	1,620	1,621	1,613	1,182	625	441

N/A = Not available because the topic was not part of that year's survey.

Note: Definitions of each risk factor are listed on the next page. For 1984-86, the proportions are weighted based on the 1980 census population for the state. For 1989, the data is weighted based on 1988 population estimates (Bureau of the Census, Series P-25, No. 1044).

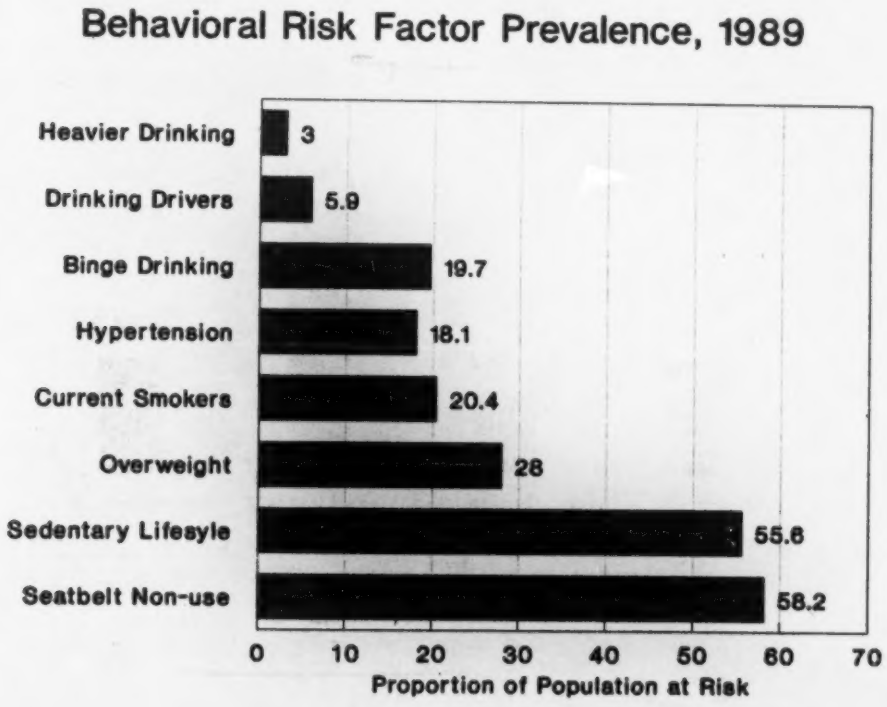
*The 1984 survey was a "point-in-time" survey conducted in February 1984.

**The definition for sedentary lifestyle in 1984 included exercise performed as part regular job duties. Beginning in 1985, job-related physical activity was excluded.

Table A2

Proportion and Estimated Number of North Dakota Residents 18 Years of Age and Older at Risk by Specific Behavioral Risk Factor North Dakota Prevalence, 1989

Behavioral Risk Factor	Proportion of Population at Risk (Prevalence)	Estimated Population at Risk
Seat Belts	58.2%	281,106
Sedentary Lifestyle	55.6%	268,548
Overweight	28.0%	135,240
Cigarette Smoking	20.4%	98,532
Acute Drinking	19.7%	95,151
Drinking Drivers	5.9%	28,497
Chronic Heavy Drinking	3.0%	14,490
Uncontrolled Hypertensives	1.1%	5,313
Current Hypertensives	18.1%	87,423

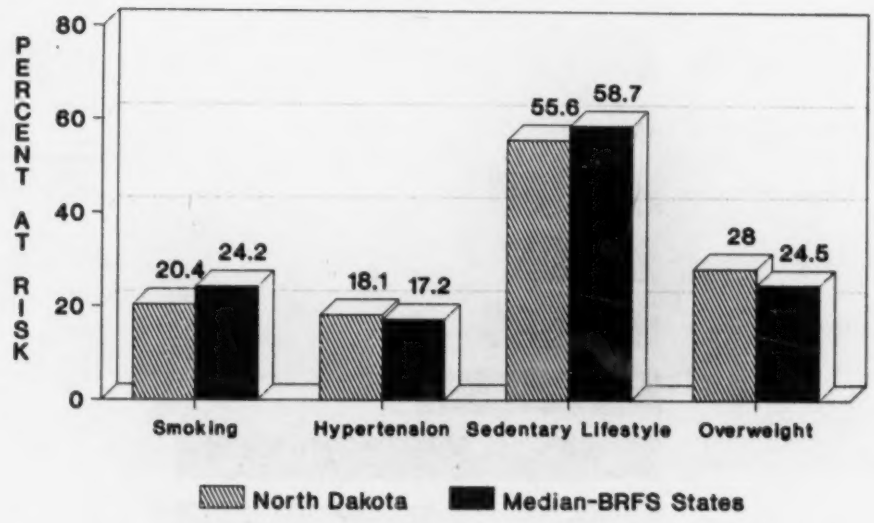


"In 1986, 1.1 million persons died with an underlying diagnosis of one of nine chronic diseases (stroke, coronary heart disease, diabetes, chronic obstructive pulmonary disease, lung cancer, female breast cancer, cervical cancer, colorectal cancer, or chronic liver disease and cirrhosis). Deaths from these causes accounted for 52% of US deaths in 1986.

Many deaths from these diseases are preventable.... Though there are nonpreventable (for example, genetic) contributors to mortality for many diseases, our understanding of what must be changed in the population to achieve lower mortality levels from the nine diseases and to increase longevity is reasonably well established. Preventable exposures include cigarette smoking, hypertension, overweight, high cholesterol, lack of exercise, heavy consumption of alcohol, and failure to use screening techniques such as mammography and Papanicoloau smears. Both reduction of exposures to known risk factors and increased utilization of known screening measures are important means in the control of chronic disease, particularly in disadvantaged populations. The critical challenges remain to implement established knowledge, to increase awareness and motivation for healthy living, and to provide resources for equitable access to appropriate care."

Hahn, Robert A., et al. Excess Deaths From Nine Chronic Diseases in the United States, 1986, Journal of the American Medical Association 1990;2654-2659

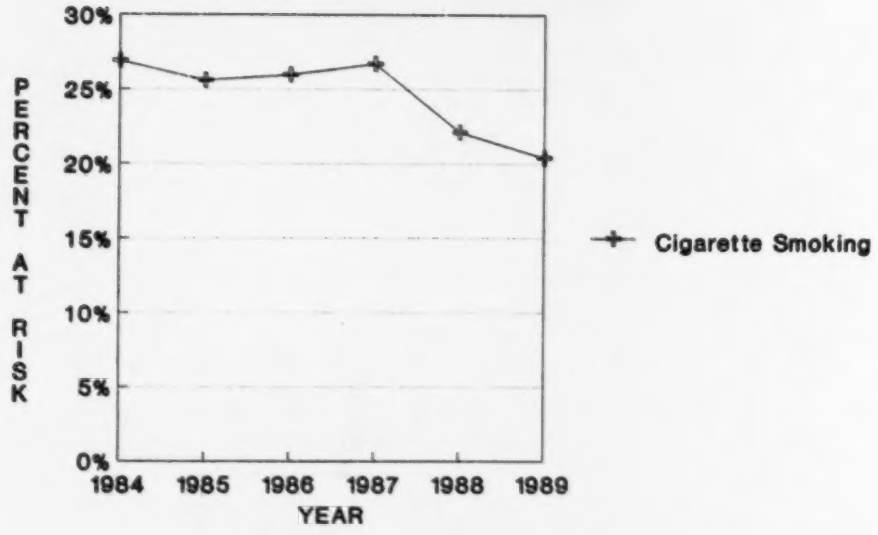
Risk Factors for
Coronary Heart Disease
North Dakota, 1989



"More than 38 million Americans have quit smoking cigarettes, and nearly half of all living adults who ever smoked have quit. Unfortunately, some 50 million Americans continue to smoke cigarettes, despite the many health education programs and anti-smoking campaigns that have been conducted during the past quarter century, despite the declining social acceptability of smoking, and despite the consequences of smoking to their health."

The Health Benefits of Smoking Cessation, a Report of the Surgeon General, 1990. U.S. Department of Health and Human Services, Public Health Services, DHHS Publication No. (CDC) 90-8416, p. 8.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



At Risk. . .

Cigarette Smoking

According to the Surgeon General's 1990 report, The Health Benefits of Smoking Cessation, the major conclusions are:

1. Smoking cessation has major and immediate health benefits for men and women of all ages. Benefits apply to persons with and without smoking-related disease.

2. Former smokers live longer than continuing smokers. For example, persons who quit smoking before age 50 have one-half the risk of dying in the next 15 years compared with continuing smokers.

3. Smoking cessation decreases the risk of lung cancer, other cancers, heart attack, stroke, and chronic lung disease.

4. Women who stop smoking before pregnancy or during the first 3 to 4 months of pregnancy reduce their risk of having a low birthweight baby to that of women who never smoked.

5. The health benefits of smoking cessation far exceed any risks from the average 5-pound weight gain or any adverse psychological effects that may follow quitting.

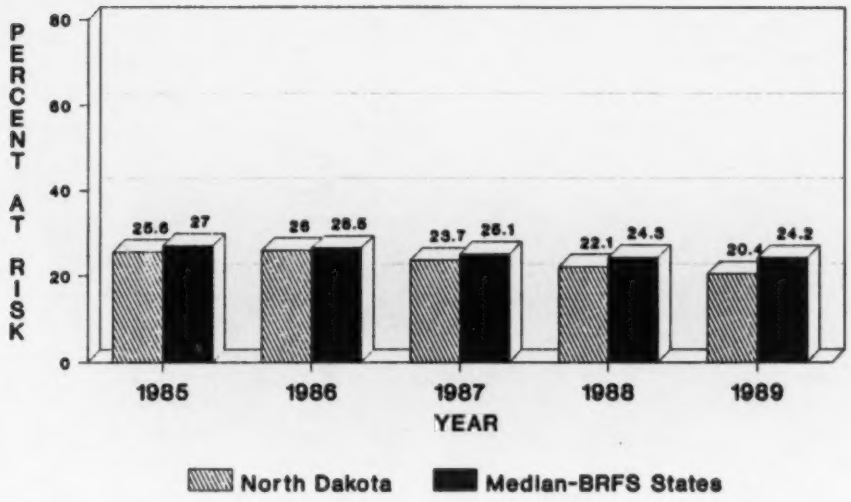
BRFS Definition: Current smokers are respondents who report having "ever smoked 100 cigarettes in their lifetime" and smoke now.

At Risk in 1989. . .

- 47.5% of survey respondents have smoked at least 100 cigarettes in their lifetime
  - 56.3% of male respondents
  - 38.7% of female respondents
- Current smokers represent 20.4% of all respondents
  - 22.7% of male respondents
  - 18.2% of female respondents
  - 3% report having stopped smoking for a week or more in the past year

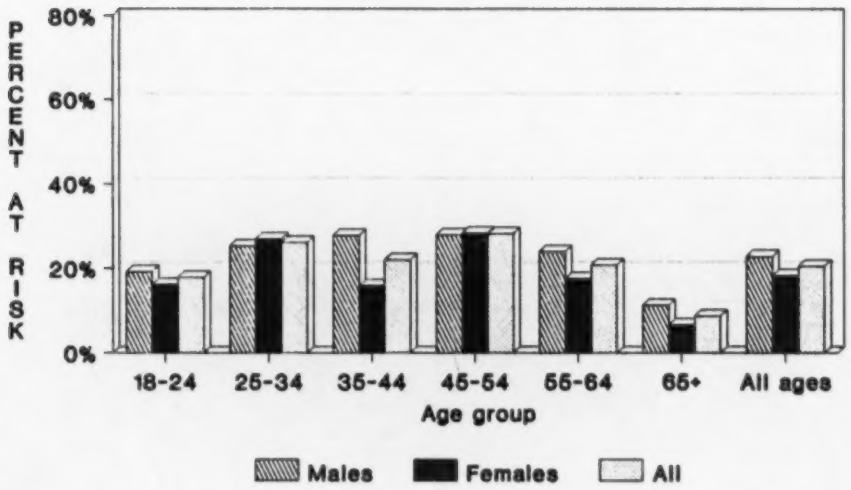
Current Smoking

1985-1989 Trend



At Risk for Cigarette Smoking

North Dakota, 1989



By age and sex

Table 1.1
Cigarette Smoking
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	154	22.7	White	322	20.5
Female	179	18.2	Black	2	12.1
			Hispanic	1	3.8
			Other	8	32.8

Age	N	%	Marital Status	N	%
18-24	36	17.8	Married	206	20.4
25-34	103	26.1	Divorced	40	36.3
35-44	66	21.9	Widowed	22	10.2
45-54	56	28.1	Separated	3	19.9
55-64	39	20.7	Never Married	55	18.8
65 and Older	33	8.6	Unmarried Couple	7	69.0

Education	N	%	Income	N	%
Less Than 9th Grade	33	17.4	Less Than $10,000	73	23.9
Some High School	36	33.8	10,000-14,999	50	23.3
High School Graduate	128	25.5	15,000-19,999	48	25.1
Some Technical School	6	33.5	20,000-24,999	42	22.6
Technical School Graduate	21	22.0	25,000-34,999	55	24.4
Some College	73	19.6	35,000-50,000	22	11.2
College Graduate	29	10.4	Over 50,000	17	11.8
Post Graduate	5	4.7	Unknown/Refused	26	15.7
Unknown/Refused	2	82.2			

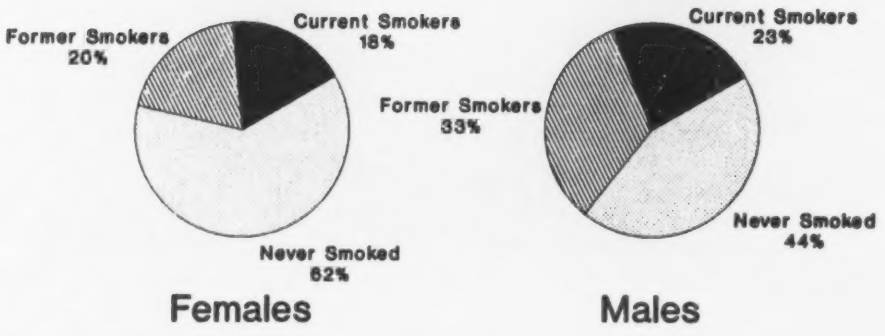
	N	%	95% Confidence Interval
TOTAL	333	20.4	± 2.1

N = Number of respondents in this category.

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

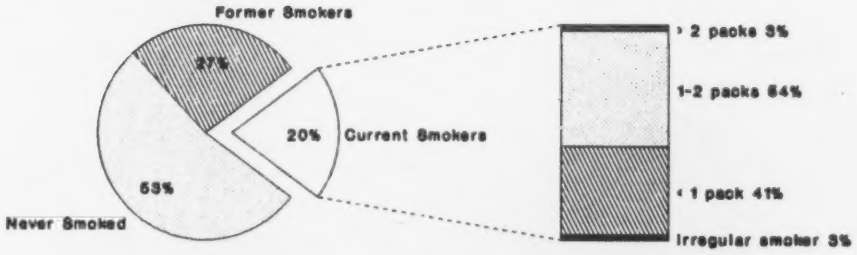
Smoking Status

North Dakota, 1989



Number of Cigarettes

Smoked by Current Smokers
1989

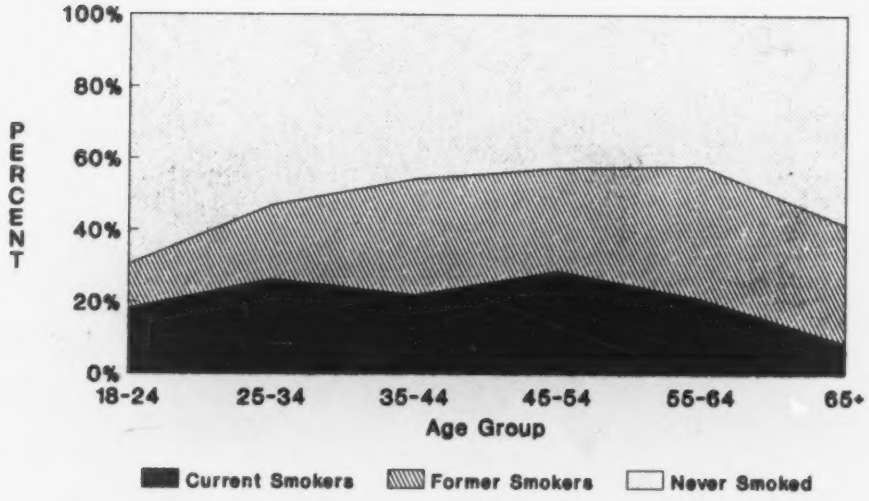


Smoking Status of All Respondents

# of Cigarettes Smoked by Current Smokers

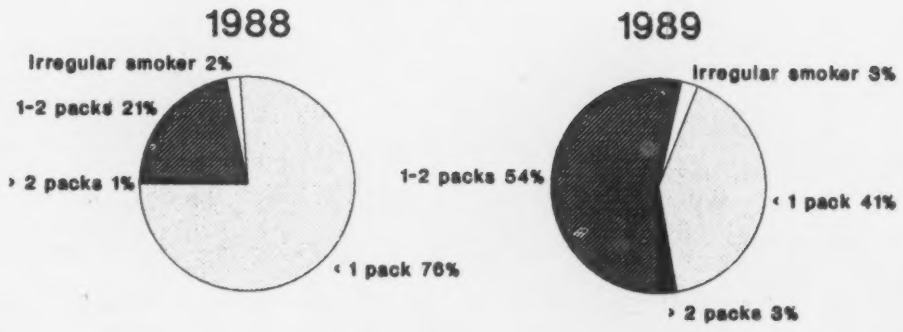
Smoking Status by Age

North Dakota, 1989



Number of Cigarettes Smoked

By Current Smokers



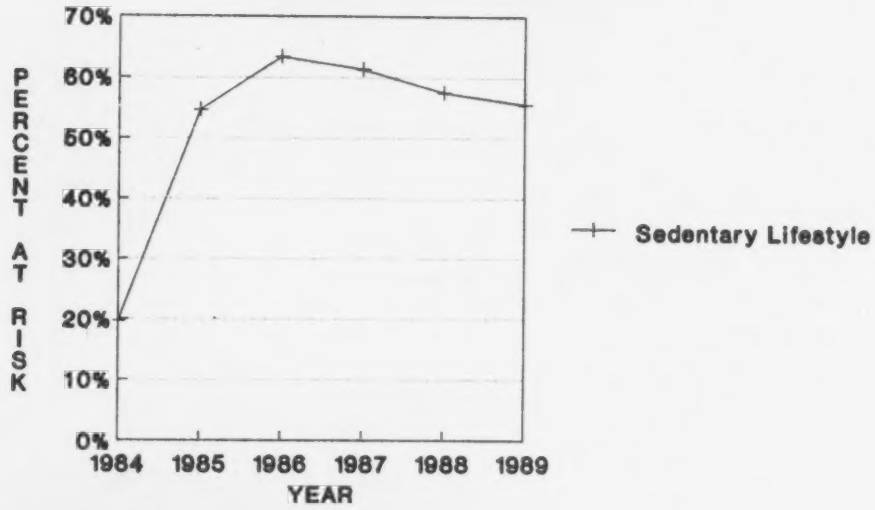
Self-reported data

SEDENTARY LIFESTYLE

"...a logical first step for the health professional in attempting to mobilize the sedentary individual may be to encourage low level physical actitivity that can be performed and associated with a regular part of one's day, rather than encouraging higher intensity cardiovascular fitness activity where several barriers, such as physical exertion, time, financial cost, skills, media influence, and social atmosphere, may need to be overcome before beginning a fitness regimen."

Kasper, M.J. (1990) Emphasis on Cardiovascular Fitness as a Barrier Toward Mobilizing the Sedentary Individual, Health Education, 21(4), 41-45.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



*1984 survey included exercise performed as part of regular job duties

At Risk . . .

Sedentary Lifestyle

Sedentary lifestyle is the most prevalent modifiable risk factor for coronary heart disease (CHD). People who are sedentary are about two times as likely as physically active persons to develop and die from CHD. Regular physical activity can also be a factor in improved control of hypertension and diabetes. Weight-bearing activities can decrease the risk of osteoporosis. Many recent studies suggest that exercise need not be strenuous - that there are many benefits to be seen by simply going for a walk or other recreational type activities.

BRFS Definition: Respondents reporting less than 20 minutes of leisure-time physical activity at least three times a week.

At Risk in 1989 . . .

- 55.6% of this state's adults did not get enough leisure-time exercise
  - 55.7% of male respondents
  - 55.5% of female respondents
- Only 8.4% met the 1990 objective for physical activity, with no significant difference between the sexes.
- The proportion at risk increases from 42% for 18-24 year olds to over 60% for those over 55 years of age.

The top 6 activities reported by males were:

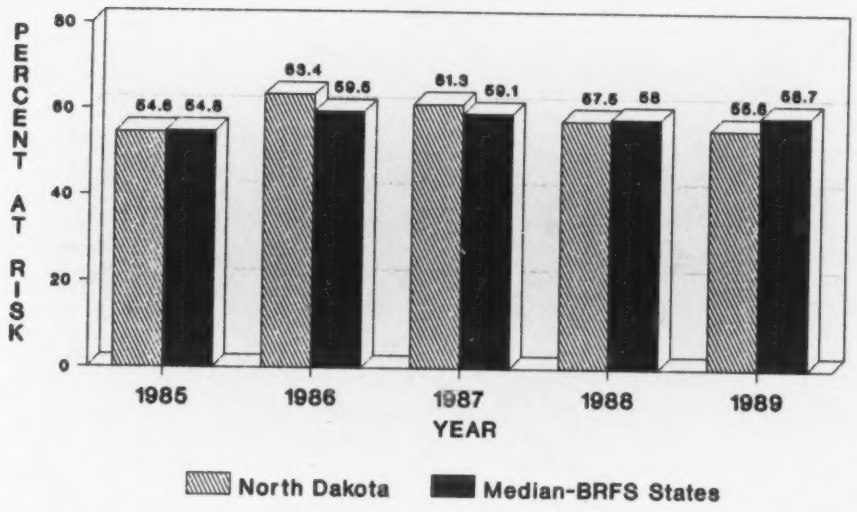
1. Walking (36%)
2. Running (9%)
3. Yard work (6%)
4. Bicycling (4%)
5. Home exercise (3%)
6. Calisthenics (3%)

The top 6 activities reported by females were:

1. Walking (57%)
2. Aerobics (7%)
3. Yard work (6%)
4. Bicycling (4%)
5. Home exercise (4%)
6. Running (3%)

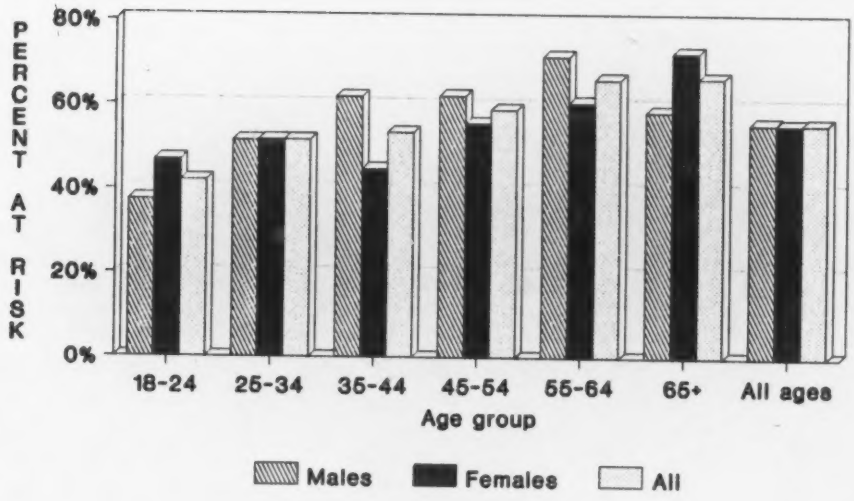
Sedentary Lifestyle

1985-1989 Trend



At Risk for Sedentary Lifestyle

North Dakota, 1989



By age and sex

Table 2.1
Sedentary Lifestyle
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	391	55.7	White	897	55.9
Female	534	55.5	Black	6	45.3
			Hispanic	12	76.8
			Other	9	29.6
			Unknown/Refused	1	29.5

Age	N	%	Marital Status	N	%
18-24	78	42.0	Married	578	56.5
25-34	207	51.6	Divorced	68	64.1
35-44	158	53.4	Widowed	135	65.8
45-54	108	58.8	Separated	7	48.7
55-64	126	66.0	Never Married	133	46.5
65 and Older	248	66.3	Unmarried Couple	4	36.3

Education	N	%	Income	N	%
Less Than 9th Grade	160	75.5	Less Than $10,000	208	65.2
Some High School	80	61.4	10,000-14,999	127	61.5
High School Graduate	291	59.3	15,000-19,999	109	54.8
Some Technical School	10	64.0	20,000-24,999	95	50.7
Technical School Graduate	61	61.2	25,000-34,999	123	49.8
Some College	166	46.9	35,000-50,000	90	48.4
College Graduate	116	44.8	Over 50,000	62	48.8
Post Graduate	38	41.8	Unknown/Refused	111	63.4
Unknown/Refused	3	100			

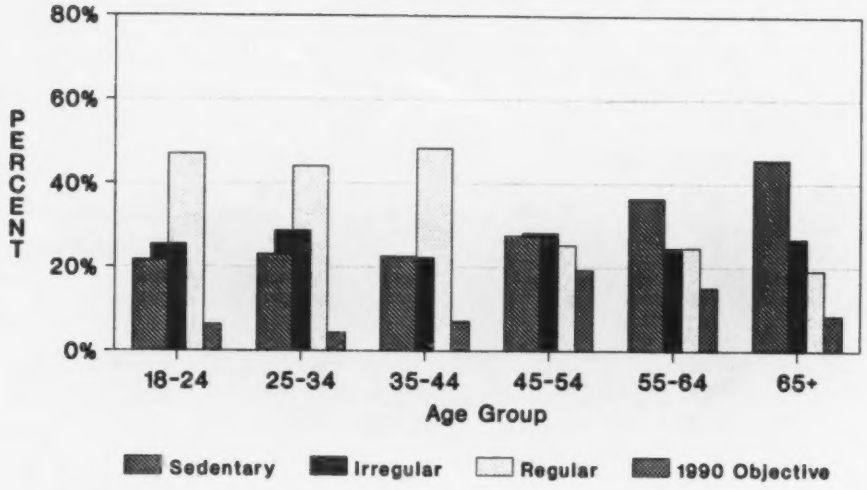
	N	%	95% Confidence Interval
TOTAL	925	55.6	± 2.8

N = Number of respondents in this category

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

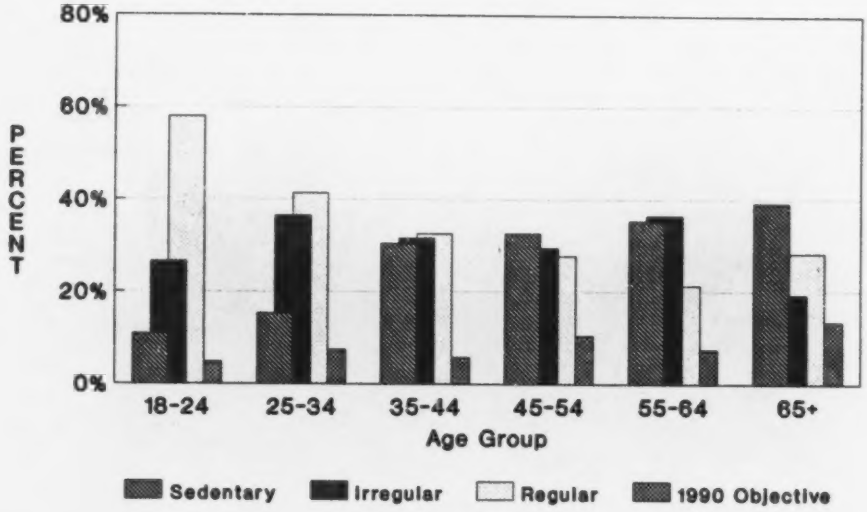
Physical Activity Level

Females, 1989



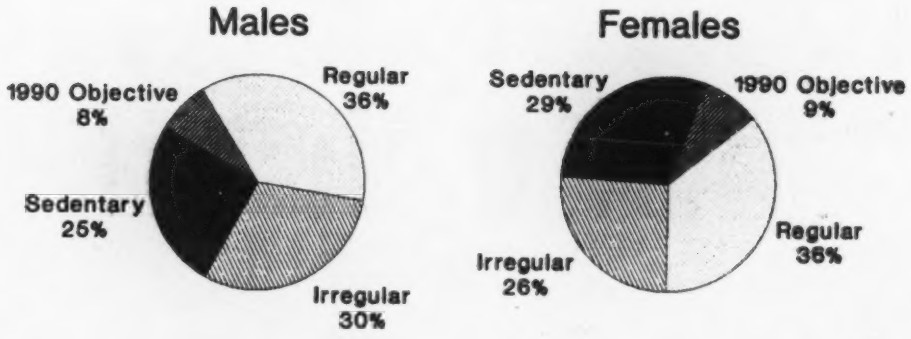
Physical Activity Level

Males, 1989



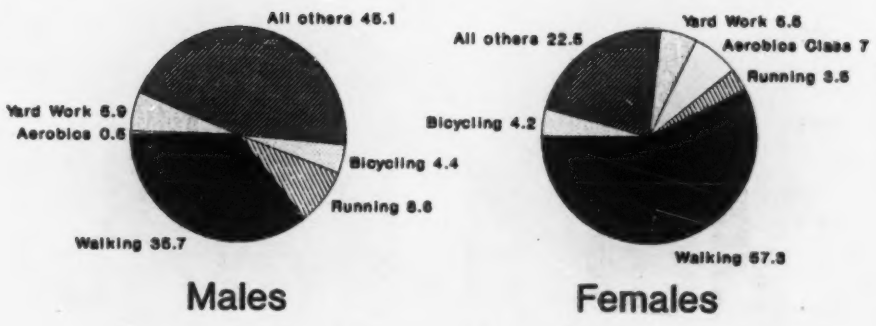
Level of Physical Activity

As reported by survey respondents



Primary Physical Activities

As reported by survey respondents



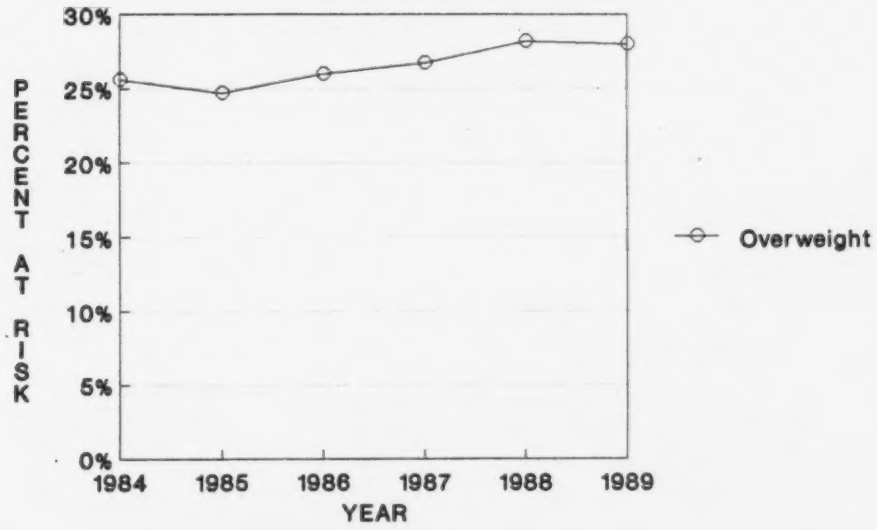
Percent of Reported Activities

OVERWEIGHT

"Excess weight or overweight occurs when too few calories are expended and too many consumed for individual metabolic requirements. The extraordinarily high prevalence of obesity in the United States--one-fourth of American adults are overweight and nearly one-tenth are severely overweight--coupled with its role as a risk factor for diabetes, hypertension, coronary artery disease and stroke, gallbladder disease, and some types of cancer, suggests that a reduction in the average weight of the general population would improve the Nation's health. Americans, in general, would benefit from a lifestyle that includes more physical activity and a diet containing fewer calories."

The Surgeon General's Report of Nutrition and Health, U.S. Department of Health and Human Services, Public Health Service, DHHS (PHS) Publication No. 88-50210, pp. 299-300.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



At Risk. . .

Overweight

Overweight has been associated with increased mortality as well as morbidity from heart disease, cancer, diabetes, digestive diseases, and cardiovascular disease. The risks increase with higher relative weight. According to the Surgeon General's Report on Nutrition and Health, the causative factors that must be considered as contributing to obesity are heredity, primary overeating, altered metabolism of adipose tissue, defective or decreased thermogenesis, decreased physical activity without appropriate reduction in food intake, and certain prescribed medications. All these factors can interact with each other, but there are only two over which individuals may have some control--overeating and underactivity.

BRFS Definition: Respondents are considered overweight if their weight is at or above 120% of the ideal weight (the mid-point value for a medium-frame person) for height, based on the 1959 Metropolitan Life Insurance Company "Desirable Weight Tables."

At Risk in 1989 . . .

Based on self-reported weights and heights:

- 28% of all respondents were at or above 120% of the ideal weight for height
  - 30% of male respondents
  - 26% of female respondents

When asked, "Are you now trying to lose weight?",

- 39.5% of all respondents report that they are trying to lose weight
  - 26% of male respondents
  - 42% of female respondents
- 59% of all respondents report that they are trying to maintain their weight

Of those trying to maintain or lose weight:

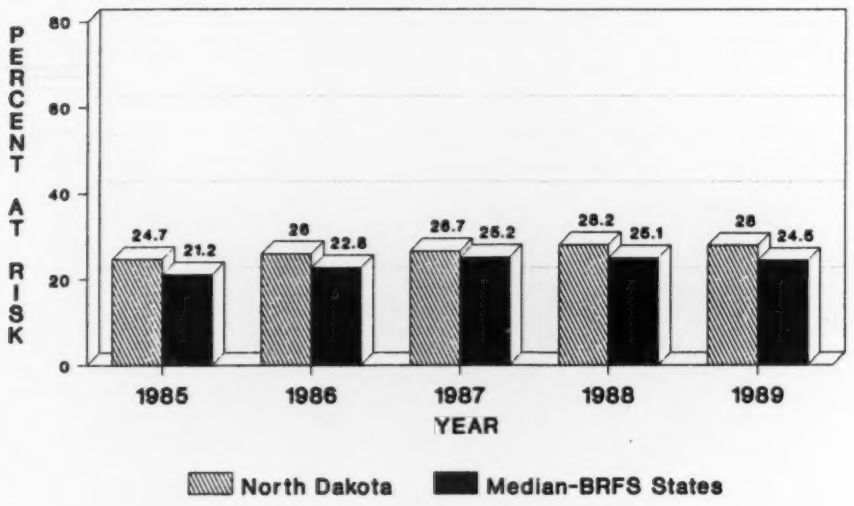
- 62% report eating fewer calories
- 56% have increased their activity
- 4% report taking special products to decrease appetite
- 4% participated in an organized weight control program

When asked, "Do you now consider yourself to be overweight, underweight, or about average?",

- 35.5% of all respondents considered themselves overweight
  - 30% of male respondents
  - 42% of female respondents
- 4.2% of all respondents considered themselves underweight
  - 4% of male respondents
  - 4% of female respondents
- 60.2% of all respondents considered themselves about average
  - 66% of male respondents
  - 54% of female respondents

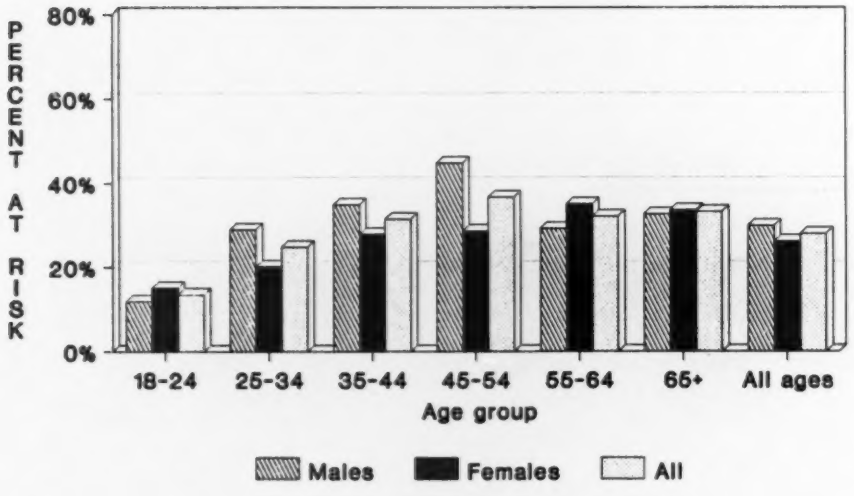
Overweight

1985-1989 Trend



At Risk for Overweight

North Dakota, 1989



By age and sex

Table 3.1
Prevalence of Overweight Persons
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	203	29.9	White	441	27.7
Female	258	26.2	Black	2	20.5
			Hispanic	4	33.3
			Other	13	48.7
			Unknown/Refused	1	29.5

Age	N	%	Marital Status	N	%
18-24	24	13.5	Married	294	29.3
25-34	95	24.8	Divorced	25	21.5
35-44	89	31.4	Widowed	73	34.4
45-54	62	36.7	Separated	4	46.1
55-64	65	32.1	Never Married	63	21.3
65 and Older	126	33.2	Unmarried Couple	2	21.5

Education	N	%	Income	N	%
Less Than 9th Grade	76	33.9	Less Than $10,000	110	31.7
Some High School	37	29.4	10,000-14,999	60	29.6
High School Graduate	168	33.6	15,000-19,999	59	33.3
Some Technical School	4	20.6	20,000-24,999	42	21.7
Technical School Graduate	24	27.1	25,000-34,999	70	30.0
Some College	79	23.0	35,000-50,000	41	21.8
College Graduate	49	21.7	Over 50,000	27	21.9
Post Graduate	23	23.1	Unknown/Refused	52	31.3
Unknown/Refused	1	42.3			

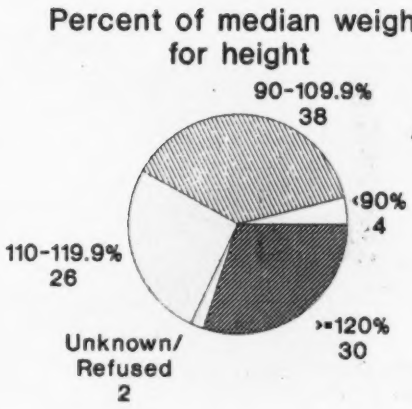
	N	%	95% Confidence Interval
TOTAL	461	28.0	± 2.4

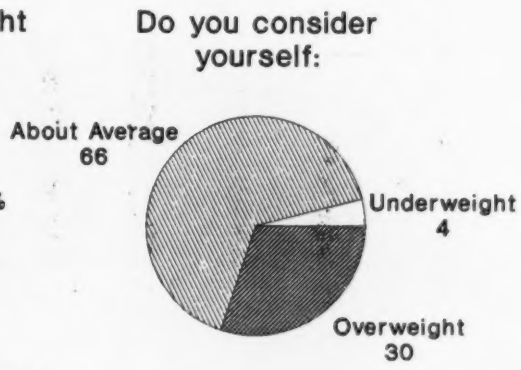
N = Number of respondents in this category

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

Distribution of Weight Categories, Men

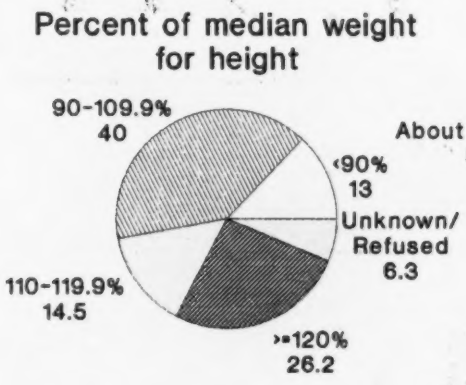
Comparing weight categories
with perceived weight status

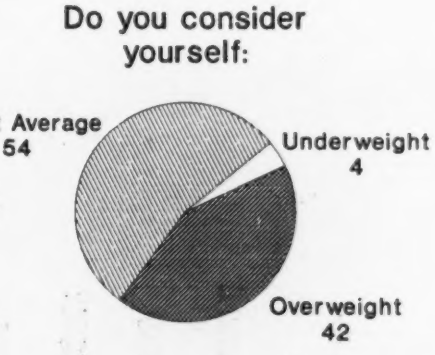




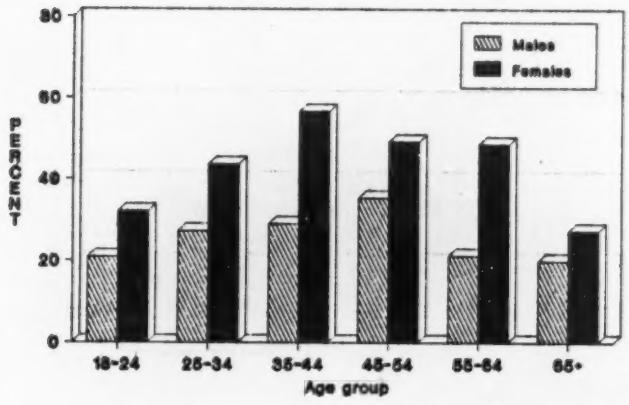
Distribution of Weight Categories, Women

Comparing weight categories
with perceived weight status

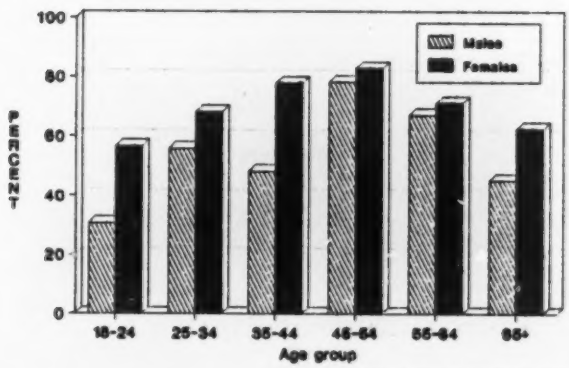




Respondents who report
they are trying to lose weight

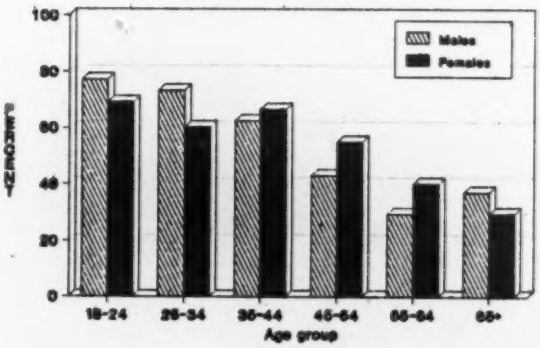


Weight Control Practices
Eating Fewer Calories



Adults trying to lose or maintain weight

Weight Control Practices
Increasing Physical Activity

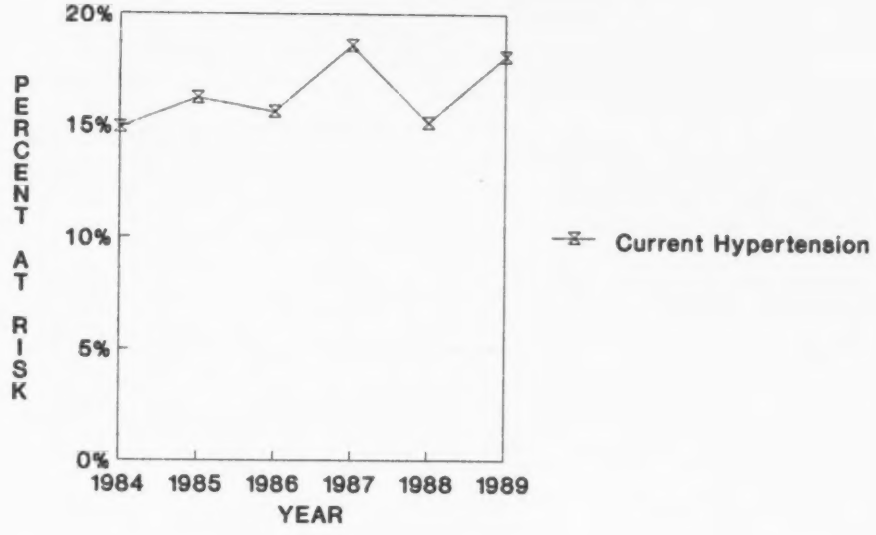


Adults trying to lose or maintain weight

Hypertension is "a disease characteristic of all industrialized societies where people tend to smoke, have sedentary habits, and be overweight. In developing nations - where obesity is uncommon, salt intake low, and people physically active -blood pressure typically stays at the same low level over a person's lifespan. Nevertheless, cardiovascular disease, to which hypertension contributes, is the major cause of premature death (deaths under age 65) in adults worldwide."

Berkeley Wellness Letter, January 1991, p.4.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



At Risk. . . .

Hypertension

Chronic hypertension, if undiscovered and untreated, can damage artery walls causing hardening and narrowing of blood vessels. Untreated hypertension is a leading cause of stroke and heart disease. A blood pressure of 140/90 is presently considered the upper limit of normal. An estimated 60 million Americans are hypertensive.

BRFS Definition: Current hypertensives are respondents who report 1)they have been told their blood pressure is high more than once, or 2)are on medication, or 3)their blood pressure is still high. This is a reflection of the known, diagnosed hypertensives in the population as defined by the National Heart, Lung, and Blood Institute.

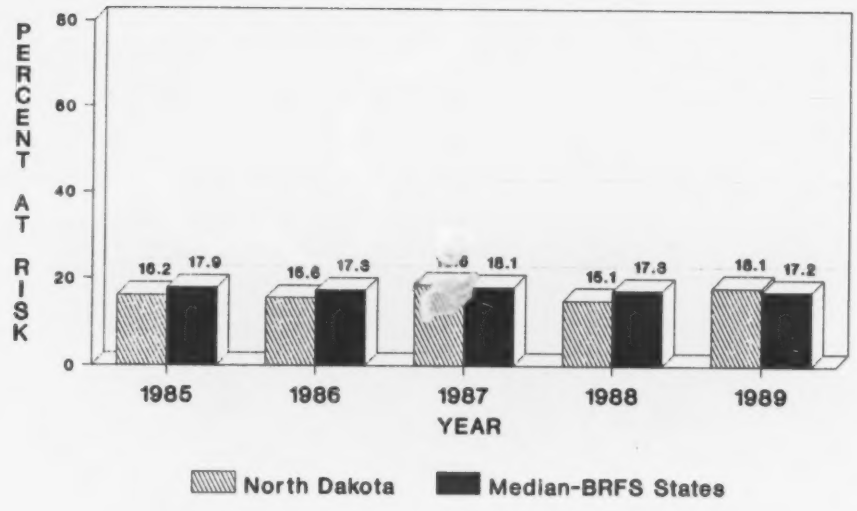
Uncontrolled hypertensives are respondents who report they have ever been told they are hypertensive and their blood pressure is "still high."

At Risk in 1989. . .

- 18% of survey repondents are current hypertensives:
    - 16% of male respondents
    - 20% of female respondents
    - the proportion of hypertensives increases with rising age
- 21.5% of all respondents have been told their blood pressure is high at least once
    - 72% have been told this more than once
    - 64% currently have medication prescribed for hypertension
        - 97% report taking their medicine regularly
        - 3% report occasional use
        - 47% report their blood pressure is under control
        - 5% report their blood pressure is still high

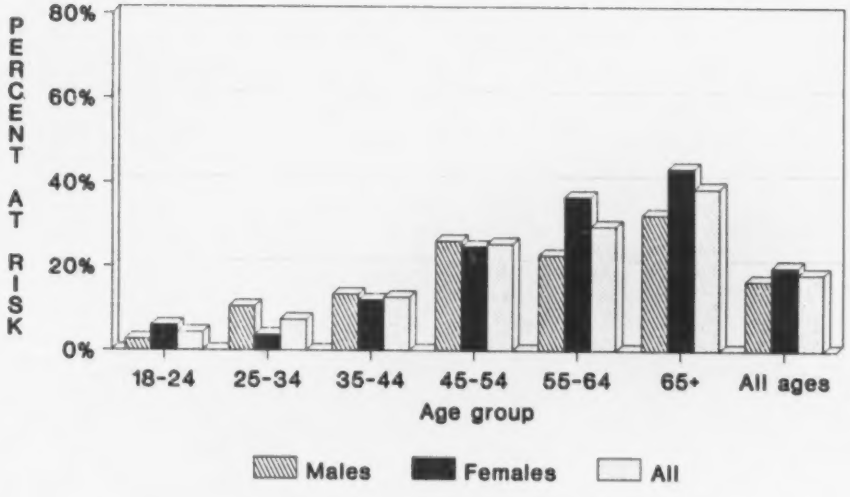
Current Hypertension

1985-1989 Trend



At Risk for Current Hypertension

North Dakota, 1989



By age and sex

Table 4.1
Current Hypertension[1]
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	114	16.4	White	315	18.2
Female	210	19.8	Black	2	19.6
			Hispanic	3	21.8
			Other	4	11.8

Age	N	%	Marital Status	N	%
18-24	8	4.2	Married	177	17.5
25-34	29	7.2	Divorced	21	18.9
35-44	34	12.6	Widowed	93	45.3
45-54	45	25.4	Separated	1	11.3
55-64	59	29.5	Never Married	31	9.3
65 and Older	149	38.5	Unmarried Couple	1	9.5

Education	N	%	Income	N	%
Less Than 9th Grade	63	28.2	Less Than $10,000	88	24.5
Some High School	35	21.1	10,000-14,999	52	22.4
High School Graduate	111	20.5	15,000-19,999	37	17.3
Some Technical School	6	35.8	20,000-24,999	24	11.6
Technical School Graduate	19	18.2	25,000-34,999	42	16.6
Some College	52	13.2	35,000-50,000	27	15.8
College Graduate	26	11.7	More Than 50,000	16	13.9
Post Graduate	12	13.6	Unknown	38	19.9

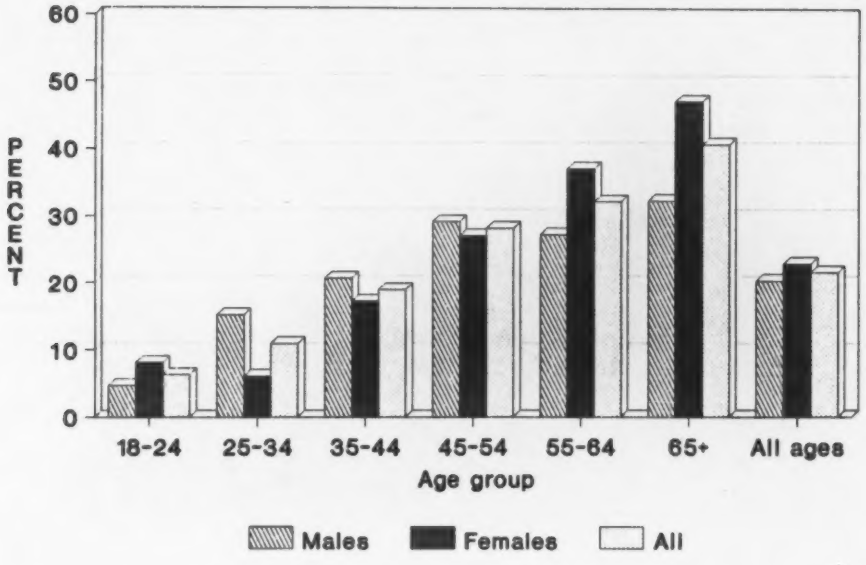
	N	%	95% Confidence Interval
TOTAL	324	18.1	± 1.9

N = Number of respondents in this category.

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

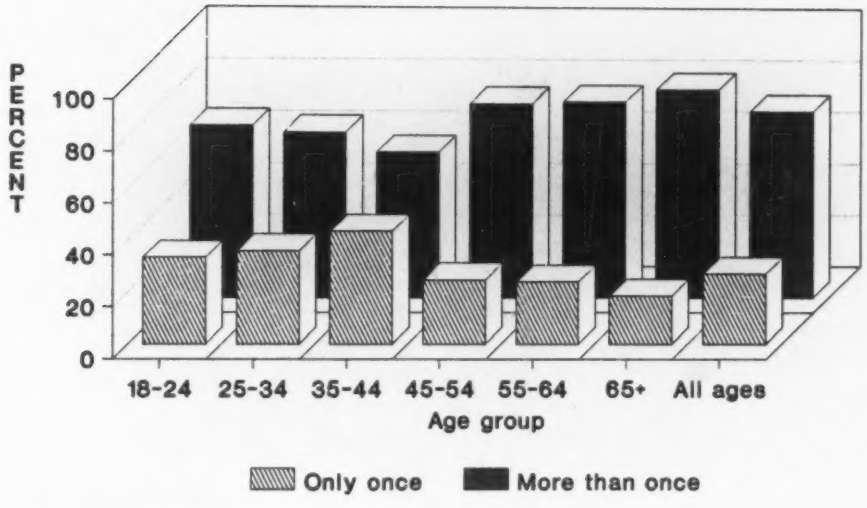
(1) Told more than once that their blood pressure is high, currently taking medication, or still high.

Ever Told Blood Pressure Is High



By age and sex

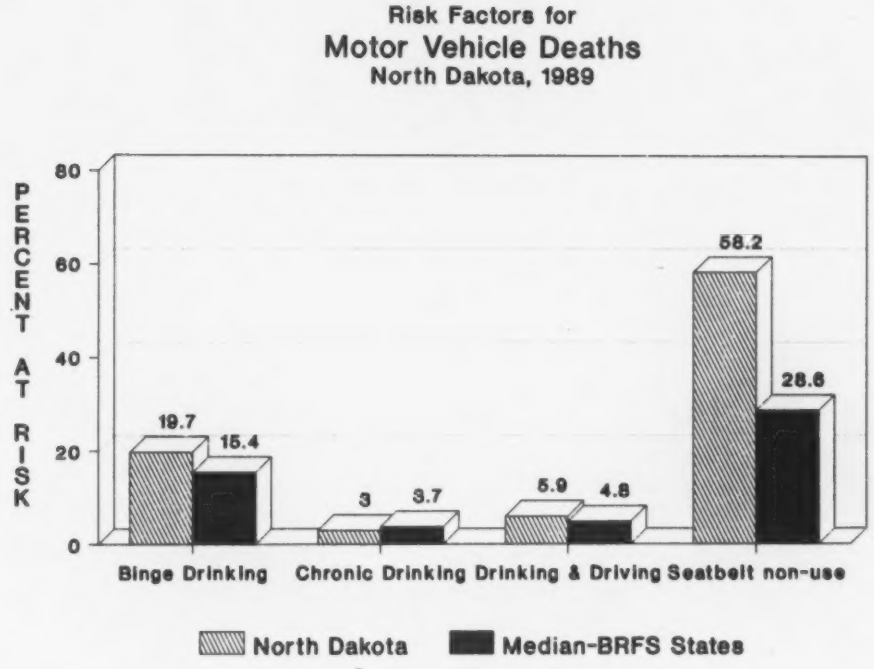
Told Blood Pressure Is High
Only Once Vs. More Than Once



Of those ever told their blood pressure is high

"Traffic crashes are the leading cause of death in the United States for all age groups from 1 through 34 years. Almost half of all traffic fatalities are alcohol-related, and an estimated 40% of all persons in the United States may be involved in an alcohol-related traffic crash sometime during their lives."

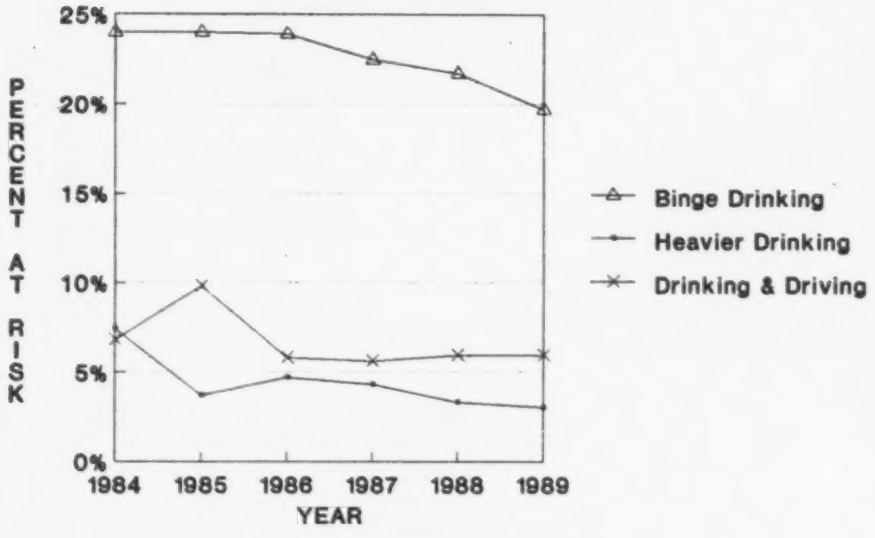
Alcohol-Related Traffic Fatalities – United States, 1982-1989, Morbidity and Mortality Weekly Report, Vol. 39, No. 49, December 14, 1990.



"Between 1985 and 1987, the estimated number of deaths attributable to alcohol consumption rose from 89,415 to 90,991. Alcohol deaths continue to rise and consumption imposes tremendous costs on society, $130 billion last year alone. On the other hand, per capita alcohol consumption is at its lowest level since 1970, and the percentage of "occasional heavy drinkers" among high school seniors was down to 35 percent in 1988, having reached a high of 41 percent in 1979 and 1980."

Health Education Reports, July 19, 1990, p. 4.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



At Risk. . .

Alcohol Consumption

"Excessive alcohol intake is a prominent contributor to 4 of the 10 leading causes of death in the United States--cirrhosis of the liver, motor vehicle and other accidents, suicides, and homicides. Chronic alcohol abuse also increases the risk for oral, esophageal, liver, and other types of cancer. Excessive alcohol intake during pregnancy is estimated to cause birth defects in 1,400 to 2,000 babies annually."

The Surgeon General's Report of Nutrition and Health, U.S. Department of Health and Human Services, Public Health Service, DHHS (PHS) Publication No. 88-50210.

(Acute) Binge Drinking

Acute or Binge Drinking
BRFS Definition: Respondents who report having 5 or more drinks on an occasion, one or more times in the past month.

Heavier Drinking

Chronic or Heavier Drinking
BRFS Definition: Respondents who report an average of 60 or more drinks in a month.

Drinking and Driving

Drinking and Driving
BRFS Definition: Respondents who report having driven after having too much to drink, one or more times in the past month.

In 1989, the questions regarding alcohol consumption changed from those asked in previous years. Amounts of beer, wine, and liquor consumed had been asked separately until 1989, when all types of liquor were included in one question. This may limit the ability to compare data from those years to the data collected in 1989 with regard to heavier or chronic drinking. The questions on binge drinking and drinking and driving are basically the same as those asked in previous years.

At Risk in 1989. . .

Based on self-reported information:

- 58% of all respondents have consumed alcoholic beverages in the past month
  - 70% of male respondents
  - 47% of female respondents

The prevalence of each alcohol risk factor was:

- higher for males than females
- highest for those in the 18 to 34 year old age group
- higher for those who have not been married

Alcohol Risk Factors, 1989

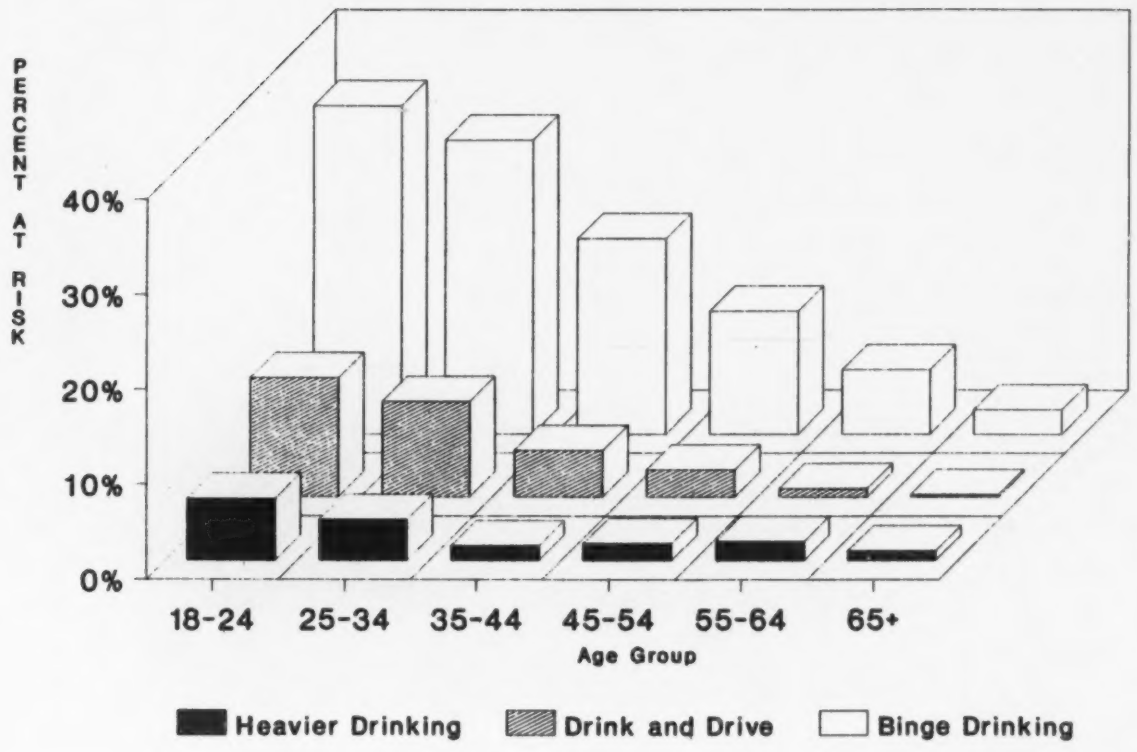


Table 5.1
Binge (Acute) Drinking
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	181	29.3	White	263	19.2
Female	94	10.1	Black	1	9.5
			Hispanic	2	23.8
			Other	9	47.7
			Refused		

Age	N	%	Marital Status	N	%
18-24	58	34.6	Married	159	16.5
25-34	113	31.0	Divorced	22	23.2
35-44	59	20.7	Widowed	6	2.5
45-54	25	13.0	Separated	1	23.1
55-64	12	6.8	Never Married	80	37.1
65 and Older	8	2.6	Unmarried Couple	7	69.0

Education	N	%	Income	N	%
Less Than 9th Grade	11	5.9	Less Than $10,000	42	15.2
Some High School	15	15.6	10,000-14,999	40	21.0
High School Graduate	101	22.1	15,000-19,999	35	20.6
Some Technical School	4	30.5	20,000-24,999	38	22.6
Technical School Graduate	19	21.2	25,000-34,999	54	25.5
Some College	70	24.7	35,000-50,000	34	19.5
College Graduate	46	21.7	Over 50,000	21	23.0
Post Graduate	8	8.9	Unknown/Refused	11	8.8
Unknown/Refused	1	42.3			

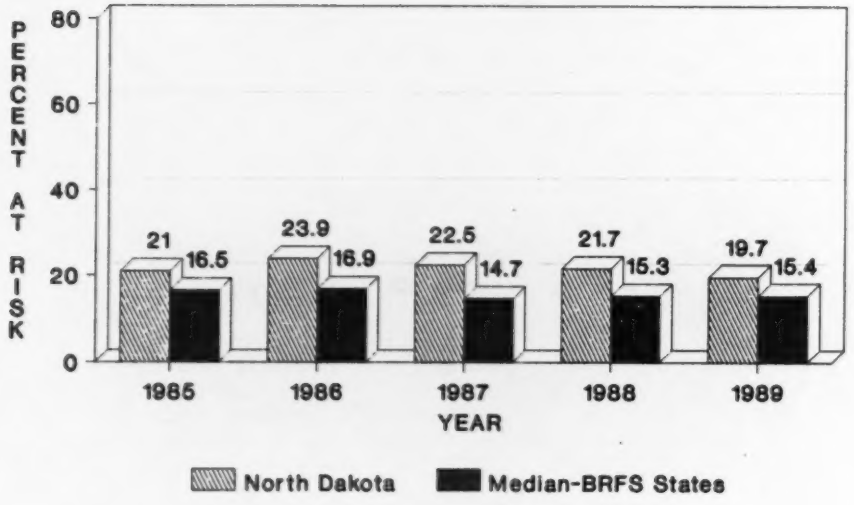
	N	%	95% Confidence Interval
TOTAL	275	19.7	± 2.3

N = Number of respondents in this category.

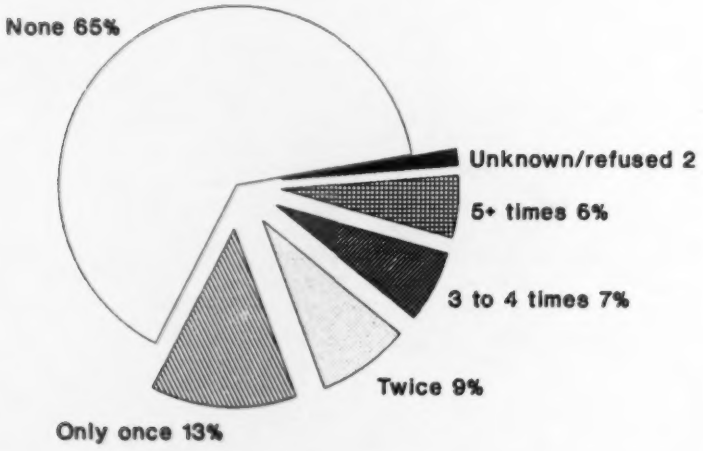
% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

Binge Drinking

1985-1989 Trend



How many times during the past month did you have 5 or more drinks on an occasion?



Respondents who drank in past month

Table 5.2
Heavier (Chronic) Drinking
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	37	5.5	White	38	2.8
Female	4	0.4	Black	1	9.5
			Hispanic	-	-
			Other	2	9.7

Age	N	%	Marital Status	N	%
18-24	10	6.5	Married	15	1.6
25-34	15	4.3	Divorced	4	3.5
35-44	6	1.5	Widowed	-	-
45-54	3	1.8	Separated	-	-
55-64	4	2.0	Never Married	21	9.4
65 and Older	3	1.0	Unmarried Couple	1	10.7

Education	N	%	Income	N	%
Less Than 9th Grade	1	0.3	Less Than $10,000	8	3.2
Some High School	1	1.1	10,000-14,999	9	4.5
High School Graduate	16	3.4	15,000-19,999	4	2.9
Some Technical School	2	17.6	20,000-24,999	5	2.7
Technical School Graduate	4	4.6	25,000-34,999	7	2.6
Some College	9	3.5	35,000-50,000	3	1.8
College Graduate	5	2.3	More Than 50,000	3	4.5
Post Graduate	3	3.4	Unknown	2	1.9
Unknown	-	-			

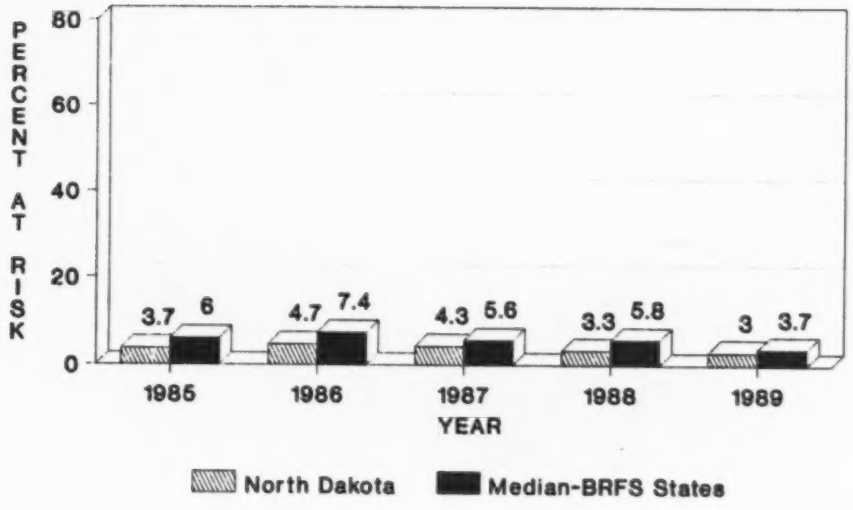
	N	%	95% Confidence Interval
TOTAL	41	3.0	± 1.0

N = Number of respondents in this category.

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

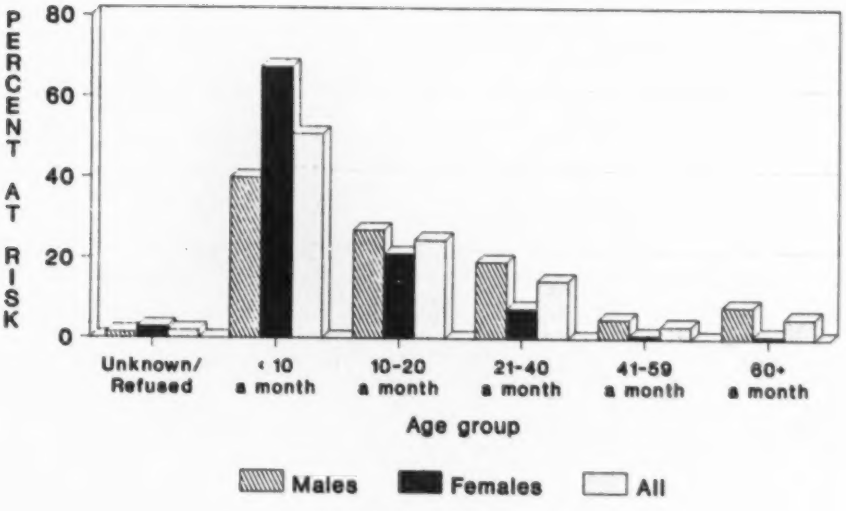
Heavier (Chronic) Drinking

1985-1989 Trend



Total Number of Drinks a Month

Of persons who reported drinking in the past month



By age and sex

Table 5.3
Drinking and Driving
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	61	9.9	White	76	5.7
Female	19	1.9	Black	-	-
			Hispanic	1	15.9
			Other	3	11.5
			Unknown/Refused	-	-

Age	N	%	Marital Status	N	%
18-24	21	12.6	Married	38	4.1
25-34	35	10.1	Divorced	9	9.3
35-44	16	4.9	Widowed	1	0.4
45-54	5	2.9	Separated	-	-
55-64	2	0.9	Never Married	31	15.1
65 and Older	1	0.3	Unmarried Couple	1	10.8

Education	N	%	Income	N	%
Less Than 9th Grade	1	0.2	Less Than $10,000	8	3.4
Some High School	5	5.8	10,000-14,999	10	4.6
High School Graduate	24	5.5	15,000-19,999	14	8.3
Some Technical School	3	25.0	20,000-24,999	15	8.2
Technical School Graduate	9	10.8	25,000-34,999	14	6.9
Some College	16	6.0	35,000-50,000	7	4.1
College Graduate	19	8.4	More Than 50,000	8	10.6
Post Graduate	3	3.7	Unknown/Refused	4	2.7
Unknown/Refused	-	-			

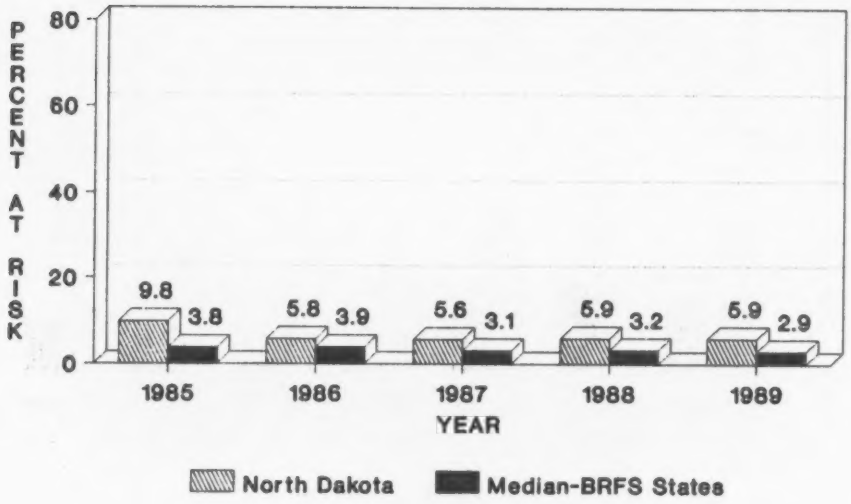
	N	%	95% Confidence Interval
TOTAL	80	5.9	± 1.4

N = Number of respondents in this category.

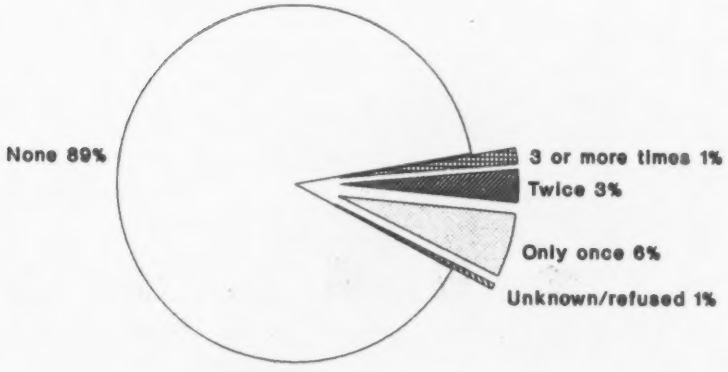
% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

Drinking and Driving

1985-1989 Trend

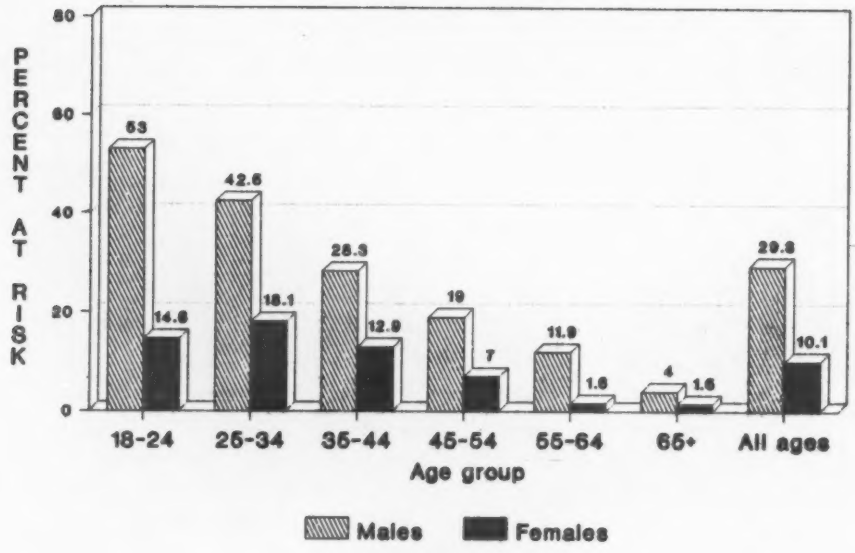


How many times during the past month have you driven when you have had perhaps too much to drink?



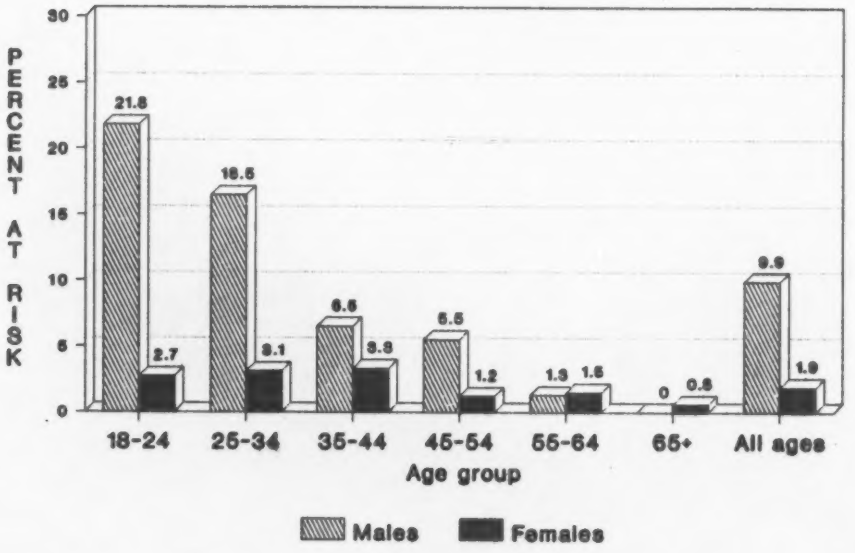
Respondents who drank in past month

Binge Drinking



By age and sex

Drinking & Driving

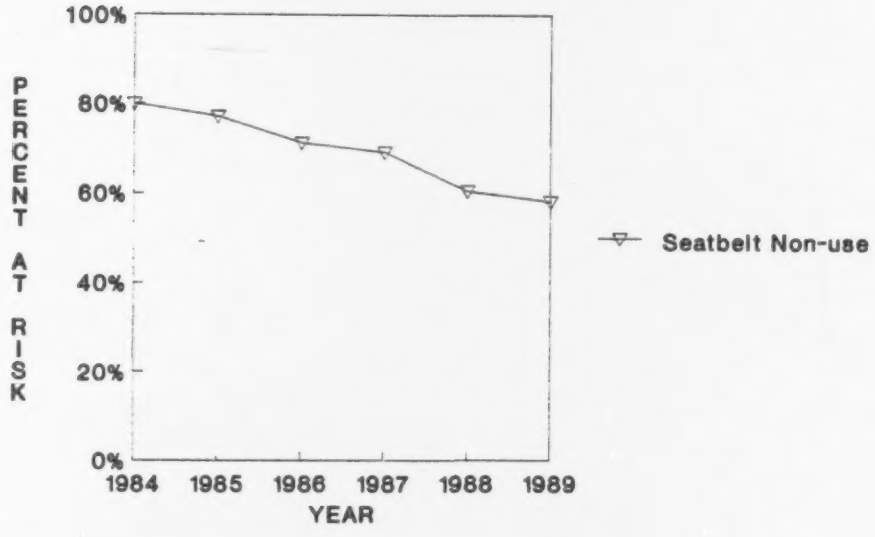


By age and sex

"Since the prevention of motor vehicle injuries is among the most cost effective and least painful means of promoting the public well-being, health agencies are turning more to injury prevention and highway safety to promote 'wellness.' And it is appropriate for state health agencies to assist in highway safety programs. Not only do they have much to contribute but these programs are clearly within their mission.... Comprehensive programs utilizing motivational tools such as health risk appraisals as well as public information, education and incentive activities, coupled with corporate use policies, and support from employees, volunteers, health care professionals, civic and service groups and educators, can achieve significant increases in the use of safety belts and child safety seats."

Prevention Notes: Newsletter on State Preventive Health Services. July-September, 1989.

Behavioral Risk Factor Survey
Proportion of Adults at Risk
North Dakota, 1984-1989



At Risk . . .

Seatbelt Non-use

Injuries from motor vehicle crashes (MVCs) are a leading cause of death among young people and a major cause of years of potential life lost. Nearly half (46%) of deaths among North Dakota's 15-24 year olds in 1989 were attributed to traffic accidents.

People who stay in their vehicles have a much better chance of escaping injury than those who are thrown from the vehicle. Although seatbelt use has improved since the early 1980's, North Dakota has the second lowest usage of seatbelts of the 40 states included in the 1989 BRFS survey. Self-reported data from the BRFS indicates that 41.8% of North Dakota adults use seatbelts regularly. In October, 1989, the North Dakota Department of Transportation conducted their first statewide observational safety belt survey which revealed that 28% of all front seat occupants were buckled up.

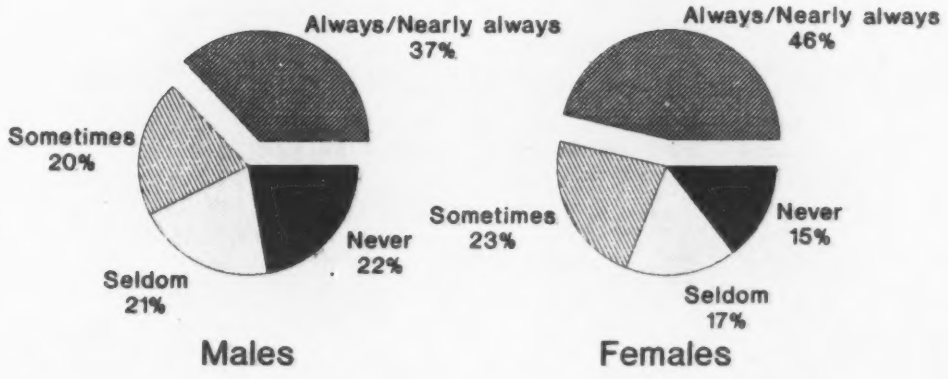
BRFS Definition: Respondents who report they "sometimes", "seldom", or "never" use seatbelts when they drive or ride in a car.

At Risk in 1989 . . .

- 58.2% of survey respondents report they sometimes, seldom, or never use seatbelts
  - 63% of male respondents
  - 54% of female respondents
- More 25 to 44 year olds reported regular use than other age groups
- There appears to be a tendency for increased seatbelt usage with increased education

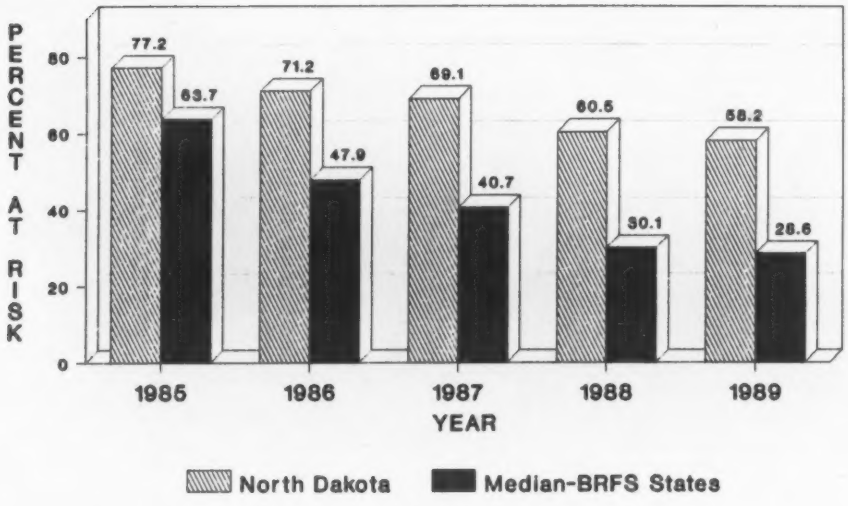
Seatbelt Usage

1989 BRFS



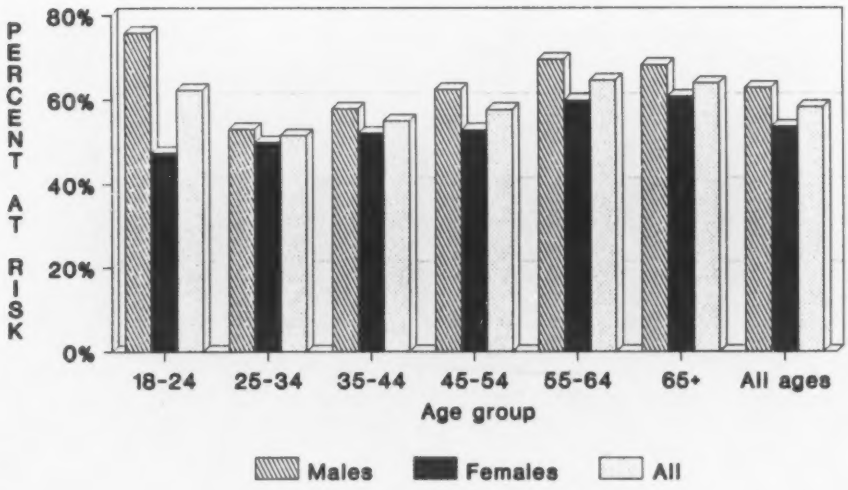
Seatbelt Non-use

1985-1989 Trend



At Risk for Seatbelt Non-use

North Dakota, 1989



By age and sex

Table 6.1
Lack of Seat Belt Use[1]
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Gender	N	%	Race	N	%
Male	425	62.8	White	904	58.4
Female	506	53.6	Black	1	9.5
			Hispanic	10	65.3
			Other	16	66.7

Age	N	%	Marital Status	N	%
18-24	98	62.2	Married	551	54.8
25-34	207	51.5	Divorced	67	62.1
35-44	158	54.9	Widowed	127	58.8
45-54	106	57.6	Separated	7	51.3
55-64	123	64.6	Never Married	173	71.3
65 and Older	239	63.9	Unmarried Couple	6	61.8

Education	N	%	Income	N	%
Less Than 9th Grade	149	69.6	Less Than 10,000	207	67.5
Some High School	90	80.2	10,000-14,999	123	61.5
High School Graduate	309	63.9	15,000-19,999	105	56.0
Some Technical School	10	62.0	20,000-24,999	113	61.9
Technical School Graduate	60	63.7	25,000-34,999	126	53.9
Some College	178	53.1	35,000-50,000	86	47.7
College Graduate	100	41.0	Over 50,000	52	45.8
Post Graduate	32	32.0	Unknown/Refused	119	67.5
Unknown/Refused	3	100			

	N	%	95% Confidence Interval
TOTAL	931	58.2	± 2.8

N = Number of respondents in this category

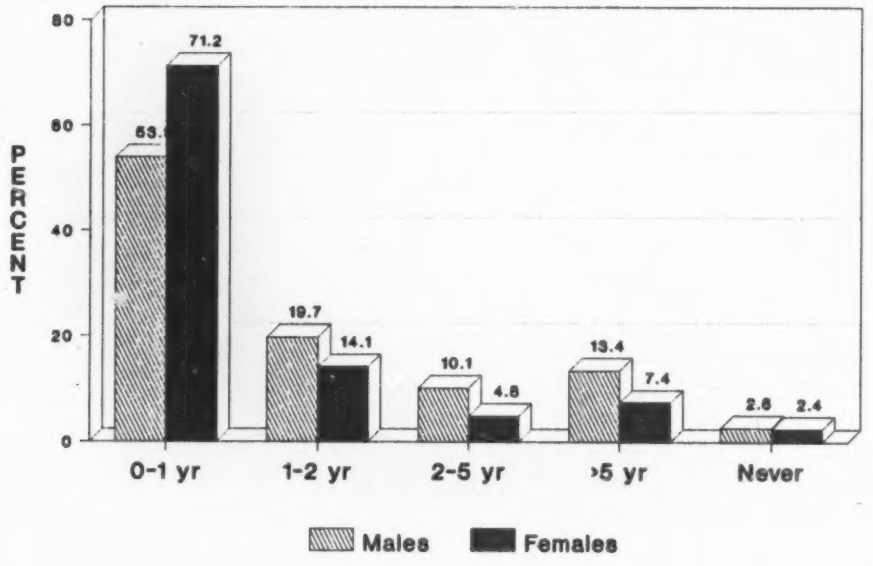
% = Percentage of respondents in demographic subgroup. This is a weighted proportion of the state population at risk based on the survey date. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

(1) Sometimes, seldom, or never use seat belts.

"...preventive services need not be delivered exclusively during visits devoted entirely to prevention. While preventive checkups often provide more time for counseling and other preventive services, and although healthy individuals may be more receptive to such interventions than those who are sick, the illness visit is an equally important time to practice prevention. In fact, some individuals may see clinicians only when they are ill or injured. The illness visit may provide the only opportunity to reach such individuals who, due to limited access to care, would be otherwise unlikely to receive preventive services."

Guide to Clinical Preventive Services. Report of the U.S. Preventive Services Task Force, 1989.

How long since last routine checkup?



At Risk . . .

High Blood Cholesterol

In 1985 the National Heart, Lung, and Blood Institute (NHLBI) initiated the National Cholesterol Education Program (NCEP) with its goal of contributing to the reduction of morbidity and mortality from coronary heart disease by lowering elevated serum cholesterol levels. Focusing on public education, individuals are encouraged to:

1. ask about serum cholesterol the next time they see their doctor
2. have their cholesterol tested if they have not already done so
3. know their number or level
4. learn whether their cholesterol level needs to be lower

Total Cholesterol

At Risk: above 240 mg/dl
Borderline-High: 200 to 239 mg/dl
Not at Risk: below 200 mg/dl

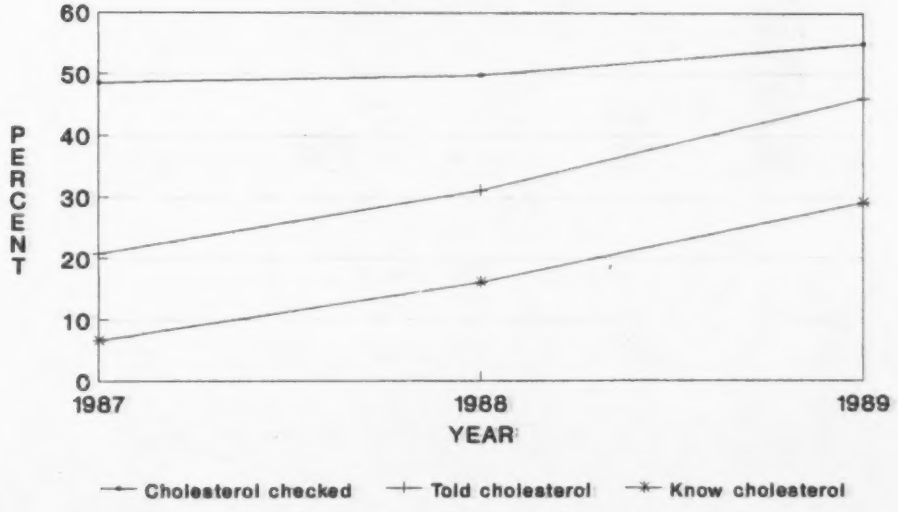
The 1989 survey asked 9 questions regarding cholesterol testing and awareness. Over the past three years these questions have been included in the survey, there has been only a slight increase in the proportion of the population that report having had their cholesterol checked. The percentage of those reporting that they were told their cholesterol level and those who knew their "number" has more than doubled from 1987 to 1989.

At Risk in 1989. . .

- 55% of survey respondents have had their cholesterol checked
  - 52% of male respondents
  - 58% of female respondents
  - 80% were checked within the past year
  - 79% were told their cholesterol number
  - 26% were told their cholesterol was high
  - 15% were under doctor's advice to lower their cholesterol
  - 32% were prescribed medications
  - 79% were recommended a low fat/low cholesterol diet
  - 32% were referred to a dietitian for assistance

Cholesterol Awareness

Changes from 1987 to 1989



Unweighted data

Table 7.1
Ever Had Blood Cholesterol Checked
By Gender and Age
North Dakota Behavioral Risk Factor Survey, 1989

	Yes		No		Unknown/ Not Sure		Total	
Sex	N	%	N	%	N	%	N	%
Male	371	52.0	295	45.3	19	2.7	685	100.0
Female	573	58.0	345	40.0	17	1.9	935	100.0

	Yes		No		Unknown/ Not Sure		Total	
Age Group								
18-24	51	27.5	121	69.3	4	3.2	176	100.0
25-34	157	38.4	234	58.8	11	2.8	402	100.0
35-44	162	54.3	128	44.4	4	1.3	294	100.0
45-54	134	71.9	47	27.0	2	1.1	183	100.0
55-64	145	74.4	41	23.6	4	2.0	190	100.0
65 and older	295	79.2	69	17.9	11	2.9	375	100.0
Total	944	55.0	640	42.6	36	2.3	1,620	100.0

N = Number of respondents in this category

% = Weighted percentage of respondents in this category

At Risk . . .

Cervical Cancer

During the period 1984-1986, North Dakota had the eighth highest cervical cancer death rate in the country. Factors that are associated with increased risk of cervical cancer include:

- sexual intercourse before age 18
- many sexual partners
- infection with human papilloma virus, herpes simplex virus, or other sexually transmitted diseases
- pregnancy at a young age
- giving birth to one or more children
- low income or poverty status
- daughters of women who used diethylstilbestrol(DES) during pregnancy
- cigarette smoking.

The principal means for detecting cervical cancer is the Papanicolaou (Pap) test. Regular Pap testing is recommended for all women who are or who have been sexually active. These tests should be repeated every one to three years depending on a woman's health history and the advice of her physician, beginning at age 18.

At Risk in 1989 . . .

Of all the women surveyed, 94% have had a Pap smear test

- 63% within the past year
- 16% within the past 2 years
- 6% within the past 5 years
- 14% more than 5 years ago
- 17% have had a hysterectomy

Less than half of the women over 55 years of age had a Pap smear test within the past year.

How long since your last pap smear?

By standard age groups, 1989

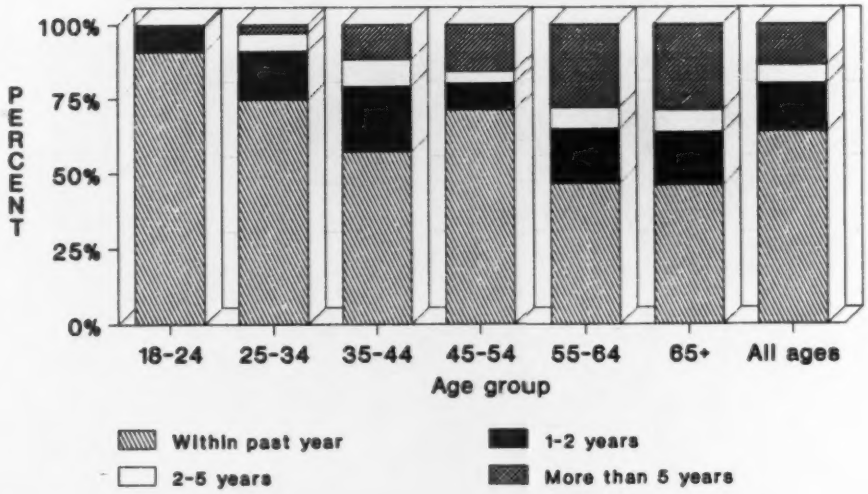


Table 8.1
Women Who Have Had Pap Smear Tests
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Age	N	%	Race	N	%
18-24	79	83.7	White	842	93.7
25-34	218	98.2	Black	5	100
35-44	157	98.7	Hispanic	6	100
45-54	105	99.5	Other	15	100
55-64	104	96.9	Unknown/Refused	1	100
65 and Older	206	86.8			

Education	N	%	Income	N	%
Less Than 9th Grade	98	88.6	Less Than $10,000	192	89.0
Some High School	61	91.0	10,000-14,999	107	92.8
High School Graduate	274	93.8	15,000-19,999	103	99.4
Some Technical School	9	87.6	20,000-24,999	84	98.0
Technical School Graduate	55	96.5	25,000-34,999	125	97.2
Some College	212	94.3	35,000-50,000	88	97.3
College Graduate	130	97.0	Over 50,000	51	93.1
Post Graduate	30	100	Unknown/Refused	119	88.7

	N	%		
TOTAL	869	93.9	TOTAL FEMALE RESPONDENTS	935

N = Number of respondents in this category.

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

At Risk. . .

Breast Cancer

Breast cancer has been the leading cause of cancer death among North Dakota women and current national projections are that one out of ten women will develop breast cancer. Although no cause has been determined, some risk factors have been identified:

- being over 40 years of age
- family history of breast cancer
- nulliparity
- late age at first live birth
- early age at menarche
- late age at menopause
- history of benign breast disease
- high socioeconomic status
- high dose radiation exposure

Screening methods have been designed to detect cancer at an early stage, thereby reducing morbidity and mortality. Mammography, an x-ray study of the breast, is the most sensitive screening method for early detection of breast cancer. Recommendations for women who are not having breast problems and have no history of breast disease include the following:

1. Breast self-examination (BSE) should be done once a month by all women.BSE is an important key to early diagnosis.

2. Women should begin receiving screening by age 40 and undergo clinical examinations annually and screening mammograms every one to two years depending on the advice of their physician.

3. Women ages 50 and older should receive a clinical examination and mammography every year.

At Risk in 1989. . .

- Of all the women surveyed 43% reported that they have had a mammogram
  - 70% within the past year
  - 20% within the past 2 years
  - 5% within the past 5 years
  - 3% more than 5 years ago
  - 85% were done as part of a routine checkup
  - 13% were done because of a breast problem
  - 1.4% have had breast cancer
- Of women over age 40, 64% have had a mammogram
- Of women who have never had a mammogram, the reasons why include:
  - 31% said it was not recommended to them
  - 37% said it was not needed
  - 3% said it was because of cost or no insurance
  - 2% had other reasons
- Less than 1% had never heard of a mammogram.

Table 9.1
Women Who Have Had Mammogram
By Selected Demographic Characteristics
North Dakota Behavioral Risk Factor Survey, 1989

Age	N	%	Race	N	%
18-24	12	11.3	White	405	42.3
25-34	28	11.4	Black	3	56.0
35-44	86	55.0	Hispanic	4	48.2
45-54	74	71.2	Other	9	66.1
55-64	63	60.5			
65 and Older	158	64.9			

Education	N	%	Income	N	%
Less Than 9th Grade	75	64.3	Less Than $10,000	93	38.5
Some High School	34	43.0	10,000-14,999	48	34.5
High School Graduate	123	40.3	15,000-19,999	45	42.7
Some Technical School	5	42.9	20,000-24,999	36	41.9
Technical School Graduate	29	52.7	25,000-34,999	44	32.0
Some College	85	34.0	35,000-50,000	42	45.9
College Graduate	50	37.5	Over 50,000	34	63.1
Post Graduate	19	69.5	Unknown/Refused	79	55.6
Unknown/Refused	1	100			

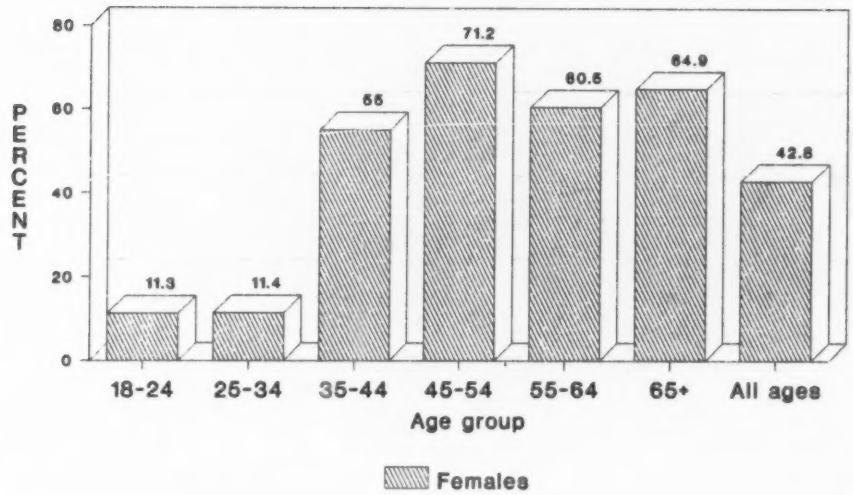
	N	%		
TOTAL	421	42.8	TOTAL FEMALE RESPONDENTS	935

N = Number of respondents in this category.

% = Percentage of respondents in this demographic subgroup. This is a weighted proportion of the state population at risk, based on the survey data. Weighting was calculated using 1988 North Dakota population estimates, Bureau of the Census, Series P-25, No. 1044.

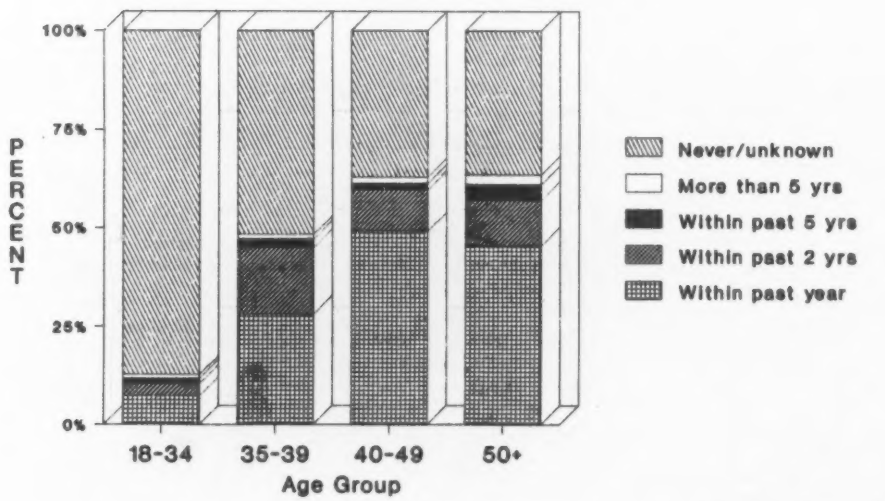
Ever Had A Mammogram

By standard age groups, 1989



How long since last mammogram?

By recommended age groups, 1989



Unweighted data

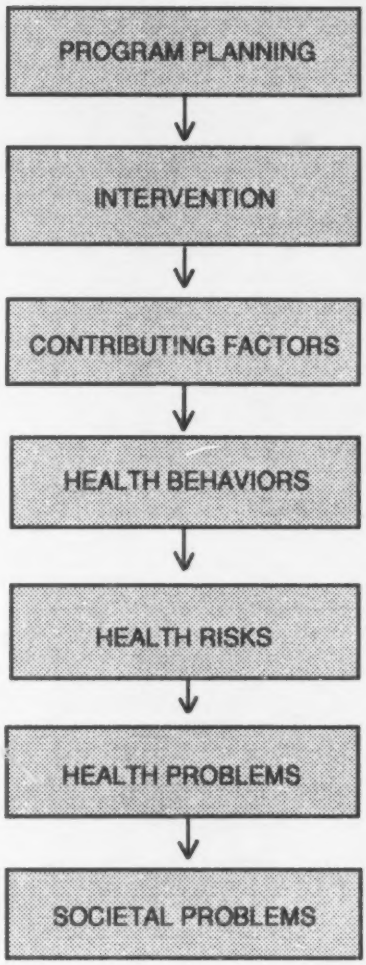
CONCLUSION

In looking at how North Dakota compared to the other states participating in the survey in 1989, the state had a lower risk for smoking (ranked 4th lowest), heavier or chronic drinking (12th lowest), and sedentary lifestyle (13th lowest). Areas where North Dakota's risk was higher than the other states included:

hypertension - ranked 28th
overweight - ranked 36th
binge drinking - ranked 36th
seatbelt non-use - ranked 39th
drinking and driving - ranked 40th.

This kind of "report card" reflects the state of the state's health as well as the nation's. There is much that remains to be done to assure that North Dakota is a healthy place to live and that each person has an equal opportunity to enjoy good health.

The Behavioral Risk Factor Surveillance System will continue to provide state-specific information about health behaviors and the utilization of preventive health practices that can reduce the burden of chronic diseases. Data from the BRFSS enables us to identify groups at risk in North Dakota for the purpose of targeting interventions. Following the trends that develop over the years will allow for monitoring the progress of these efforts. This process can best be summarized by the diagram (to the right) from Promoting Physical Activity Among Adults: A CDC Community Intervention Handbook.



"The goal of life is to die young--
as late as possible."
Ashley Montague

TECHNICAL NOTES

The methodology used in the 1989 survey was a random digit dialing (RDD) telephone survey, which drew upon a set of all possible telephone numbers based on existing North Dakota telephone prefixes. Initially, a precall phase was implemented whereby randomly generated telephone numbers were contacted to determine if they were households. Non-working and non-residential telephone numbers were eliminated at this point. This randomized cluster sampling strategy as adopted from Waksberg minimized the number of phone calls needed to complete the desired number of interviews.

In addition to survey method and sampling strategy, statistical considerations including confidence levels, precision, population variablilty and subpopulations were addressed. A sample of 1,620 was selected after the optimal cluster size was determined to be 3, with a 0.5 intra class correlation, a confidence level of 95 percent, a precision level of 4 percent, and the population variablity estimated at 0.5.

As established by the Centers for Disease Control (CDC), standard procedures for identifying eligible respondents were followed. The interview phase also provided for at least five callbacks when phones were unanswered or busy, and when interview appointments needed to be scheduled with the selected respondent. In addition, second attempts were made to obtain interviews from persons who refused to complete the interview on the first contact. Telephone numbers were eliminated and replaced only after it was determined a number would not produce an interview. A majority of interviews were conducted during evenings and weekends. Some weekday interviewing was conducted to allow shift workers a chance to be included in the survey. The telephone precalls and interviews were conducted by local professional interviewers who have been trained by the Health Department and CDC and supervised by Health Department staff.

During this phase, responses to survey questions were entered into personal computers utilizing the Computer Assisted Telephone Interview (CATI) system. Throughout the survey period, a series of edit, validation, and posting activities were performed by the survey coordinator. At the end of the interview period, the 135 completed interviews were copied to floppy disks and sent to CDC for further processing.

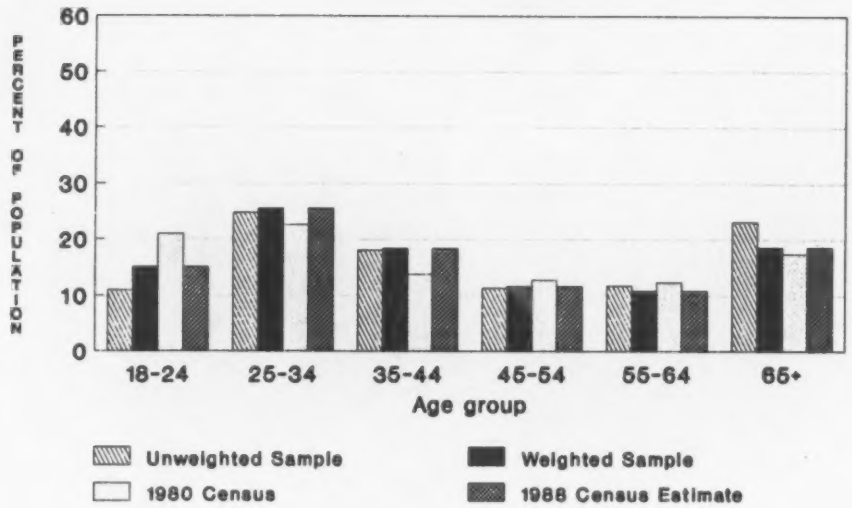
When the survey was completed for the year, statistical staff at CDC analyzed the data and provided the states with standard data tables by various demographic characteristics. These tables are summarized in the graphs and tables included in this report. For more information regarding the survey, please contact the Division of Health Promotion and Education.

Survey and State Population
By Age and Gender
North Dakota Residents, Ages 18 and Older
1989

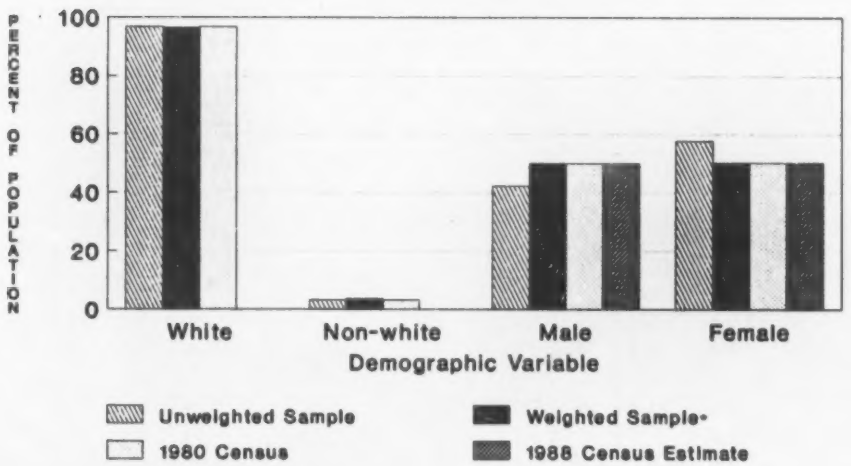
	Survey Respondents		Population	
	N	%	N	%
Age				
18-24	176	10.9	73,000	15.1
25-34	402	24.8	123,000	25.5
35-44	294	18.1	89,000	18.4
45-54	183	11.3	56,000	11.6
55-64	190	11.7	52,000	10.8
65 and older	375	23.1	90,000	18.6
Total	1,620	100.0	483,000	100.0
Gender				
Male	685	42.3	241,000	49.9
Female	935	57.7	242,000	50.1
Total	1,620	100.0	483,000	100.0

Note: State population is the 1988 mid-year estimate from State Population and Household Estimates, With Age, Sex, and Components of Change 1981-1988, U.S. Department of Commerce, Bureau of the Census, Series P-25, No. 1044.

Comparison of Survey Sample
With Census Data
For Age



Comparison of Survey Sample
With Census Data
For Race and Gender



•Weighted to 1988 census estimates by age,sex and race; & for number of phone lines and number of household members.

APPENDIX B

BEHAVIORAL RISK FACTOR PREVALENCES IN 39 STATES AND THE DISTRICT OF COLUMBIA
UNITED STATES, 1989

STATE	SAMPLE SIZE	OBESITY % (Rank)	SMOKING % (Rank)	LIFESTYLE % (Rank)	HYPERTENSION % (Rank)
Alabama	1805	23.9 (18)	21.9 (10)	59.2 (22)	17.3 (24)
Arizona	1492	23.5 (16)	25.2 (25)	49.1 (03)	6.8 (17)
California	2391	21.0 (04)	21.4 (06)	52.1 (08)	15.3 (06)
Connecticut	1356	23.1 (10)	26.6 (32)	56.9 (15)	16.3 (13)
Dist. of Columbia	1486	27.6 (34)	21.9 (11)	74.7 (40)	16.3 (15)
Florida	1683	25.5 (28)	24.6 (22)	51.6 (07)	19.4 (36)
Georgia	1602	23.2 (13)	23.2 (16)	63.6 (32)	17.4 (25)
Hawaii	1860	20.5 (03)	21.8 (08)	3.9 (10)	17.2 (21)
Idaho	1742	21.6 (05)	19.2 (02)	57.6 (17)	13.1 (01)
Illinois	1780	27.2 (33)	25.6 (26)	61.5 (25)	18.9 (34)
Indiana	2166	27.7 (35)	27.0 (35)	61.6 (26)	19.4 (37)
Iowa	1286	29.6 (39)	22.7 (15)	63.0 (30)	15.8 (09)
Kentucky	1794	26.6 (31)	30.4 (40)	69.0 (37)	18.5 (31)
Maine	1246	24.3 (19)	27.2 (37)	63.8 (33)	15.8 (08)
Maryland	1708	22.4 (08)	22.0 (12)	61.8 (27)	17.1 (20)
Massachusetts	1221	24.6 (21)	23.6 (19)	54.6 (12)	18.4 (30)
Michigan	2362	28.6 (38)	27.5 (38)	60.4 (23)	19.6 (38)
Minnesota	3415	25.5 (27)	21.0 (05)	58.7 (20)	15.3 (04)
Missouri	1499	23.3 (14)	25.9 (27)	62.3 (28)	17.2 (22)
Montana	1182	21.9 (07)	19.4 (03)	49.8 (05)	16.3 (14)
Nebraska	1429	25.8 (30)	22.3 (14)	61.3 (24)	16.7 (16)
New Hampshire	1362	23.3 (15)	24.8 (23)	44.7 (01)	15.3 (05)
New Mexico	1171	19.2 (01)	22.1 (13)	56.3 (14)	13.2 (02)
New York	1314	23.1 (11)	23.4 (17)	73.1 (39)	16.1 (12)
North Carolina	1763	25.5 (29)	26.6 (30)	62.8 (29)	17.7 (26)
North Dakota	1620	28.0 (36)	20.4 (04)	55.6 (14)	18.1 (28)
Ohio	1427	25.1 (25)	26.6 (31)	63.4 (31)	15.9 (11)
Oklahoma	1172	22.9 (09)	26.7 (33)	71.2 (38)	17.0 (19)
Oregon	1691	24.6 (22)	23.4 (18)	46.5 (02)	16.9 (18)
Pennsylvania	1814	30.8 (40)	27.0 (34)	57.2 (16)	19.9 (39)
Rhode Island	1793	23.2 (12)	26.1 (29)	58.7 (21)	18.9 (33)
South Carolina	1851	25.1 (24)	24.2 (21)	68.2 (36)	19.1 (35)
South Dakota	1784	25.4 (26)	21.8 (07)	54.1 (11)	15.6 (07)
Tennessee	2389	23.7 (17)	27.0 (36)	64.3 (34)	18.4 (29)
Texas	1490	21.7 (06)	21.8 (09)	53.0 (09)	18.0 (27)
Utah	1788	19.8 (02)	16.4 (01)	49.1 (04)	14.9 (03)
Virginia	1431	24.9 (23)	25.0 (24)	57.7 (19)	18.7 (32)
Washington	1512	24.5 (20)	24.2 (20)	49.9 (06)	17.3 (23)
West Virginia	1714	28.1 (37)	27.6 (39)	66.2 (35)	20.3 (40)
Wisconsin	1276	27.1 (32)	26.0 (28)	57.7 (18)	15.9 (10)
Median		24.53	24.15	58.71	17.16
Range		11.65	13.96	29.98	7.13

APPENDIX B

BEHAVIORAL RISK FACTOR PREVALENCES IN 39 STATES AND THE DISTRICT OF COLUMBIA UNITED STATES, 1989

STATE	SAMPLE SIZE	BINGE DRINKING % (Rank)	CHRONIC DRINKING % (Rank)	DRINKING &DRIVING % (Rank)	SEATBELT NONUSE % (Rank)
Alabama	1805	8.9 (05)	2.3 (06)	2.1 (09)	42.6 (31)
Arizona	1492	18.3 (31)	5.5 (34)	3.4 (25)	33.1 (27)
California	2391	17.0 (27)	4.0 (22)	3.6 (28)	16.4 (08)
Connecticut	1356	17.6 (28)	4.6 (30)	3.1 (23)	24.7 (14)
Dist. of Columbia	1486	6.7 (02)	3.2 (14)	2.5 (15)	26.5 (16)
Florida	1683	15.4 (19)	5.0 (33)	2.6 (17)	17.8 (09)
Georgia	1602	9.9 (08)	2.2 (03)	2.2 (11)	25.0 (15)
Hawaii	1860	19.7 (35)	6.6 (40)	4.0 (31)	6.3 (01)
Idaho	1742	11.5 (12)	3.4 (18)	2.2 (10)	31.8 (26)
Illinois	1780	15.1 (18)	4.5 (29)	2.8 (19)	30.9 (25)
Indiana	2166	14.0 (16)	3.5 (19)	2.2 (12)	30.7 (24)
Iowa	1286	16.6 (25)	4.2 (24)	4.2 (33)	23.2 (12)
Kentucky	1794	10.0 (09)	3.6 (20)	1.6 (06)	47.9 (34)
Maine	1246	13.9 (15)	2.5 (09)	2.0 (08)	46.4 (32)
Maryland	1708	6.9 (03)	3.3 (15)	1.1 (01)	16.1 (06)
Massachusetts	1221	21.0 (39)	6.1 (38)	3.3 (24)	48.5 (36)
Michigan	2362	18.7 (34)	4.7 (31)	4.4 (34)	20.3 (11)
Minnesota	3415	20.4 (38)	3.9 (21)	3.8 (30)	23.9 (13)
Missouri	1499	13.7 (14)	4.3 (27)	2.6 (18)	28.1 (20)
Montana	1182	18.4 (32)	3.3 (17)	5.0 (37)	27.8 (18)
Nebraska	1429	16.4 (24)	3.0 (13)	4.4 (35)	56.5 (38)
New Hampshire	1362	17.7 (29)	6.1 (37)	3.5 (27)	48.2 (35)
New Mexico	1171	15.4 (20)	4.3 (26)	4.0 (32)	14.7 (02)
New York	1314	8.7 (04)	1.9 (01)	1.3 (02)	18.5 (10)
North Carolina	1763	9.5 (06)	2.8 (10)	1.6 (05)	15.3 (05)
North Dakota	1620	19.7 (36)	3.0 (12)	5.9 (40)	58.2 (39)
Ohio	1427	16.2 (22)	4.3 (25)	2.8 (20)	28.0 (19)
Oklahoma	1172	9.7 (07)	2.2 (05)	2.3 (13)	29.2 (22)
Oregon	1691	15.4 (21)	4.3 (28)	3.5 (26)	34.8 (29)
Pennsylvania	1814	20.2 (37)	5.8 (36)	3.7 (29)	30.3 (23)
Rhode Island	1793	15.0 (17)	4.2 (23)	3.0 (22)	47.1 (33)
South Carolina	1851	10.9 (11)	2.2 (04)	2.4 (14)	38.7 (30)
South Dakota	1784	17.8 (30)	2.8 (11)	4.9 (36)	61.9 (40)
Tennessee	2389	6.7 (01)	2.0 (02)	1.7 (07)	29.1 (21)
Texas	1490	18.5 (33)	6.2 (39)	5.6 (38)	15.0 (03)
Utah	1788	12.0 (13)	2.5 (08)	1.5 (03)	34.6 (28)
Virginia	1431	16.8 (26)	3.3 (16)	2.9 (21)	16.1 (07)
Washington	1512	16.2 (23)	4.7 (32)	2.6 (16)	15.1 (04)
West Virginia	1714	10.5 (10)	2.5 (07)	1.5 (04)	52.1 (37)
Wisconsin	1276	26.7 (40)	5.6 (35)	5.7 (39)	27.6 (17)
Median		15.4	3.71	2.88	28.59
Range		20.08	4.77	4.83	55.57

APPENDIX C

Table 2.3
Leading Causes of Resident Death and Cause-Specific Rates (1)
North Dakota and United States
1989

United States (2)				North Dakota			
Cause	Rank	Deaths	Death Rate	Cause	Rank	Deaths	Death Rate
Diseases of the Heart	1	734,450	295.9	Diseases of the Heart	1	1,868	283.0
Malignant Neoplasms	2	496,130	199.9	Malignant Neoplasms	2	1,356	205.5
Cerebrovascular Disease	3	146,170	58.9	Cerebrovascular Disease	3	405	61.4
Accidents	4	92,240	37.2	Accidents	4	213	32.3
Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	83,950	33.8	Chronic Obstructive Pulmonary Diseases and Allied Conditions	5	207	31.4
Influenza and Pneumonia	6	75,140	30.3	Influenza and Pneumonia	6	193	29.2
Diabetes	7	46,520	18.7	Diabetes	7	144	21.8
Suicide	8	29,970	12.1	Atherosclerosis	8	94	14.2
Other Infectious and Parasitic Diseases (3)	9	27,740	11.2	Other Diseases of the Arteries	9	75	11.4
Cirrhosis of the Liver	10	26,350	10.6	Suicide	10	72	10.9
Subtotal		1,758,660	708.6	Subtotal		4,627	701.1
All Other Causes		396,340	159.5	All Other Causes		867	131.4
Total		2,155,000	868.1	Total		5,494	832.4

(1) Per 100,000 Resident Population
(2) Monthly Vital Statistics Report, Vol. 39, No. 1, May 8, 1990, National Center for Health Statistics, Provisional
(3) Includes Data for Deaths Due to Human Immunodeficiency Virus Infection

Resident Deaths by Age, Gender, and Selected Causes
North Dakota, 1989

Primary Cause of Death	Age at Death																			
	Under 1		1-4		5-14		15-24		25-34		35-44		45-54		55-64		65+		All Ages	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Intestinal Infections	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	1
Tuberculosis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	1	2	1
Meningococcal Infection	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	1
Septicemia	--	--	--	1	--	--	--	--	1	--	1	--	1	2	1	2	8	9	12	14
Viral Hepatitis	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	--	1	1
Other Infectious and Parasitic Diseases	1	1	--	--	--	--	--	1	2	--	2	--	4	--	2	1	7	1	18	4
Malignant Neoplasms	--	--	1	1	2	1	--	1	8	3	13	26	40	37	114	96	566	447	744	612
Benign Neoplasms	--	--	1	--	--	--	--	--	--	--	1	--	--	--	--	--	5	11	7	11
Diabetes Mellitus	--	--	--	--	--	--	--	--	1	1	4	2	7	5	6	7	50	61	68	76
Nutritional Deficiencies	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	8	4	8
Anemias	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--	3
Meningitis	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Diseases of the Heart	2	1	--	--	1	1	1	--	9	2	16	4	46	8	120	39	820	798	1015	853
Hypertension With or Without Renal Disease	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	14	8	14
Cerebrovascular Diseases	--	--	--	--	--	--	--	1	--	1	1	1	4	4	11	6	164	212	180	225
Atherosclerosis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	46	47	47	47
Other Arterial Diseases	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	1	46	26	48	27
Acute Bronchitis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	1	1	1
Pneumonia and Influenza	--	--	--	--	--	--	--	--	--	1	2	1	--	--	3	1	92	93	97	96
Chronic Obstructive Pulmonary Diseases	--	--	--	--	--	--	1	--	--	--	--	--	7	1	10	7	132	49	150	57
Ulcer	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1	11	7	12	9
Appendicitis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1
Hernia	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	6	14	7	14
Cirrhosis	--	--	--	--	--	--	--	--	1	--	6	1	4	6	13	3	11	18	35	28
Cholelithiasis	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	--	7	--
Nephritis and Nephrosis	1	--	--	--	--	--	--	--	--	--	--	1	1	--	--	--	26	28	28	29
Infections of Kidney	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	2
Hyperplasia of Prostate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	2	--
Complications of Pregnancy	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	1
Congenital Anomalies	14	15	2	3	1	2	2	1	--	1	1	--	1	--	--	--	2	1	23	23
Perinatal Conditions	11	13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	13
Ill-Defined Conditions	7	3	--	--	--	--	1	--	2	--	2	1	--	--	--	2	17	26	29	32
All Other Diseases	2	3	2	--	6	1	3	1	3	3	6	3	10	9	21	12	155	193	208	225
Traffic Accidents	--	--	1	1	1	2	25	4	8	5	7	3	9	3	9	3	10	8	70	29
All Other Accidents	1	1	3	1	5	2	3	--	8	3	13	1	7	3	6	1	36	20	82	32
Suicide	--	--	--	--	1	--	14	2	10	3	5	--	4	1	14	--	17	1	65	7
Homicide/Legal Intervention	--	--	--	1	--	1	2	--	--	1	1	1	1	--	--	--	--	1	4	5
All Other External Causes	--	--	--	--	--	--	--	--	1	--	1	2	--	--	1	--	--	--	3	2
All Causes of Death	39	38	10	9	17	10	52	11	54	25	82	47	147	81	336	183	2252	2101	2989	2505

TABLE V-1

Major Causes of Death by Risk Factors
North Dakota, 1989

Causes	Percent of All Deaths	Risk Factor
Heart disease, chronic obstructive pulmonary diseases and other diseases of the arteries	36.4	Smoking, hypertension, elevated serum cholesterol (diet), lack of exercise, diabetes, stress, family history.
Cancer	22.9	Smoking, worksite carcinogens, environmental carcinogens, alcohol, diet.
Stroke	7.6	Hypertension, smoking, elevated serum cholesterol, stress.
All accidents including motor vehicle	4.4	Alcohol, drug abuse, smoking (fires), product design, gun misuse, no seat belts, speed, roadway design, vehicle engineering.
Influenza and pneumonia	3.7	Smoking, vaccination status.
Diabetes	2.1	Obesity.
Arteriosclerosis	1.8	Elevated serum cholesterol.
Suicide	1.3	Stress, alcohol and drug abuse, emotional distress.
Total	80.2	

Source: Adapted from Health: U.S., 1980, Department of Health and Human Services; and North Dakota Vital Statistics Report, 1989.